Proposal Appendix

Combe Fill South Landfill Remedial Design Pursuant to Term Contract X-464

State of New Jersey
Department of The Treasury
Division of Purchase & Property
Trenton, New Jersey

July 1987

O'BRIEN & GERE

8.10.3 APPENDIX

a) Additional Changes to Disclosure

b) Compliance with MBE/WBE & Small Business

c) Field Sampling

d) Health & Safety Plan (HASP)

e) QA/QC Outline

f) Documentation and/or Certification of Insurance

Changes to Disclosure

O'BRIEN & GERE

STATEMENT OF NO CONFLICT

Pursuant to the Conflict of Interest clause of Section 4.17 of the Term Contract X-464, this is to certify that O'Brien & Gere Engineers, Inc. has no contractual or other business relationship regarding any of the persons or entities referenced in Section 4.17.1 of this Site Specific RFP.

Cornelius B. Murphy, Jr.

Cornelius B. Murphy, Jr.
Senior Vice President
O'Brien & Gere Engineers, Inc.

7/14/87

Date

STATEMENT OF CHANGES TO DISCLOSURE

This is to certify that there have been no changes to the background information submitted on Term Contract X-464 with the exception of Attachment I-C, Stockholder Disclosure Form. A revised Attachment I-C, reflecting current information, is herewith submitted.

Cornelius B. Murphy Jr.
Cornelius B. Murphy, Jr.
Senior Vice President
O'Brien & Gere Engineers, Inc.

7/14/97
Date

ATTACHMENT IB

State of New Jersey

DIVISION OF PURCHASE AND PROPERTY

PURCHASE BUREAU

STOCKHOLDER DISCLOSURE FORM

Name O'Brien & Gere Engineers, Inc.

Address 1304 Buckley Road. PO Box 4873

City & State Syracuse, NY 13221

List the names and addresses of all individuals, partnerships, corporations or any other owner having 10% or greater interest in the corporation or partnership named in Item 1. If a listed owner is a corporation or partnership, then list the names and addresses of holders of 10% or more interest in that corporation or partnership. If additional space is necessary, list on an attached sheet. If there are no owners with 10% or more interest in your company, enter "None" below.

Complete affidavit at bottom of form. If this has already been submitted to the Purchase Bureau, use the form for any changes and complete the affidavit.

NAME	ADDRESS Street City/Twp. County State Zip
Russell L. Sutphen	225 Seneca Street, Chittenango, Madison, NY 13037

President of the firm (Type or print name) John R. Loveland

Phone (315) 451-4700

I certify that:

- ☐ List of stockholders names and addresses has been submitted to the Purchase Bureau and it is current and correct to the best of my knowledge, with the exceptions as listed above.
- ☒ The list of stockholders above is current and correct to the best of my knowledge.
- ☐ There are no stockholders holding 10% or more interest in this corporation or firm to the best of my knowledge.
- ☐ Firm is a sole ownership and not subject to corporation or partnership disclosure requirement.

Signature of Authorized Representative Stephen A Kuruc Jr.

Type or Print Name Stephen A. Kuruc, Jr. Title Admin. Vice President

Witnessed by Harold J. Brown Date 5/28/87

VENDOR: PLEASE COMPLETE AND SIGN THIS FORM AND RETURN IT TO THE PURCHASE BUREAU WITH YOUR BID PROPOSAL OR, TO PREFILE, RETURN TO THE FOLLOWING ADDRESS:

Purchase Bureau
CN230
135 W. Hanover St.
Trenton, N. J. 08625

PB-137 (Rev. 5/9/82)

HAZARDOUS WASTE CONTRACTOR DISCLOSURE FORM*

(Separate copies to be completed by Bidder, each venture partner if bidder is a joint venture and each proposed subcontractor)

SECTION I

A. Name of corporation, partnership or proprietorship completing this form

O'Brien & Gere Engineers, Inc.

If party completing this form is a venture partner, state name of the Joint Venture submitting a bid proposal

N/A

If party completing this form is a proposed subcontractor, state name of the proposed Prime Contractor who is submitting the bid proposal

N/A

B. Party completing this form is a: ☐ Sole Proprietorship ☐ Partnership ☒ Corporation

SECTION II

A. If a sole proprietorship, give the following information:

1. Full business name N/A
2. Business address
3. Full name of proprietor if different from No. 1 (Include middle initial)
4. Home address
5. Date of birth: (Statement of age is not sufficient)
6. Social Security Number

* *This form, the attached Certification of Completeness and Accuracy (Section IX) and the attached Consent to Investigation must be separately completed and dated for each bid proposal. Photocopies or duplicates of forms submitted in response to previous RFP's will not be responsive.*

(Form Revised May 22, 1985)

SECTION II *(Continued)*

B. If a partnership, give the following information for each partner.

1. Full name (include MI) N/A

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

2. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

3. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) Russell L. Sutphen

   Business address 1304 Buckley Road

   Syracuse, NY 13221

   Home address 225 Seneca Street

   Chittenango, NY 13037

   Date of birth 8/8/31
   (Statement of age is not sufficient)

   Social Security Number 052-26-0138

2. Full name (include MI) John R. Loveland

   Business address 1304 Buckley Road

   Syracuse, NY 13221

   Home address 150 Cedar Heights Drive

   Jamesville, NY 13078

   Date of birth 9/24/37
   (Statement of age is not sufficient)

   Social Security Number 108-30-4382

3. Full name (include MI) Cornelius B. Murphy, Jr.

   Business address 1304 Buckley Road

   Syracuse, NY 13221

   Home address 4454 Kasson Road

   Syracuse, NY 13215

   Date of birth 7/1/44
   (Statement of age is not sufficient)

   Social Security Number 090-36-3993

(CONTINUED ON THE FOLLOWING PAGE)

[If necessary add additional sheets giving the additional information using the same format as above]

DIRECTORS AND OFFICERS

Name	Social Security No.	Date of Birth	Business Address	Home Address
Peter C. Johnson	099-32-2930	10/19/40	One Valley Square Suite 200 512 Township Line Road Blue Bell, PA 19422	1512 N. Beacham Dr. Ambler, PA 19002
Stephen A. Kuruc, Jr.	112-30-0992	11/23/37	1304 Buckley Road Syracuse, NY 13221	4951 Harvest Lane Liverpool, NY 13088
Gary N. Kirsch	055-32-5347	03/18/40	1304 Buckley Road Syracuse, NY 13221	4053 Bel Harbor Dr. Liverpool, NY 13088
Richard L. Elander	061-32-4247	03/27/41	1304 Buckley Road Syracuse, NY 13221	115 Kennedy Lane No. Syracuse, NY 13212
Brien N. Gidlow	070-40-0486	04/09/47	1304 Buckley Road Syracuse, NY 13221	9 Collin Avenue Fayetteville, NY 13066
John J. Keegan	060-30-4574	02/15/38	1304 Buckley Road Syracuse, NY 13221	Stone Quarry Rd. R.D. #3 Cazenovia, NY 13035
William A. Lester	096-32-8818	07/18/41	1304 Buckley Road Syracuse, NY 13221	4845 Juneway Drive Liverpool, NY 13088
Charles A. Willis	N/A	01/27/37	Willis Engineers, Inc. Suite 318 6545 Morison Blvd. Charlotte, NC 28211	2421 Knollwood Rd. Charlotte, NC 28211
Edwin C. Tifft, Jr.	083-36-5904	09/30/44	1304 Buckley Road Syracuse, NY 13221	221 Windcrest Drive Camillus, NY 13031
Steven R. Garver	189-34-8481	09/29/45	1304 Buckley Road Syracuse, NY 13221	Knightsbridge Rd. Manor Heights Skaneateles, NY 13152

Name	Social Security No.	Date of Birth	Business Address	Home Address
Edward M. Halley, Jr.	216-30-4081	10/28/33	Suite 1120 8201 Corporate Drive Landover, MD 20785	5804 Swarthmore Dr. College Park, MD 20740
Michael S. Kolceski	053-38-6957	06/16/48	1304 Buckley Road Syracuse, NY 13221	7673 E. Dead Creek Rd. Baldwinsville, NY 13027
Thomas A. Jordan	004-44-9170	05/19/48	1304 Buckley Road Syracuse, NY 13221	302 Bradford Parkway Syracuse, NY 13224
Dean L. Palmer	073-30-4504	02/25/37	5000 Cedar Plaza Pkwy. Suite 211 St. Louis, MO 63128	12055 Charwick Dr. St. Louis, MO 63128
Thomas B. Quinn	054-36-4137	05/15/47	1304 Buckley Road Syracuse, NY 13221	4317 Cleveland Rd. Syracuse, NY 13215
Alan N. Culbertson	165-38-2914	11/22/48	1304 Buckley Rd. Syracuse, NY 13221	116 Will-O-Wind Dr. Jamesville, NY 13078

SECTION III

Does party completing this form have any subsidiaries which you have the ability to control? ☒ Yes ☐ No

If yes, please list the name and address for each:

1. Name Justin & Courtney, Inc.
   Address 1304 Buckley Road
   Syracuse, NY 13221

2. Name
   Address

3. Name
   Address

SECTION IV

If party completing this form is the bidder.this section must be completed. If bidder is a joint venture, this section must be completed by one of the venture partners.

Is bidder proposing to use subcontractor(s) in the performance of this contract? ☒ Yes ☐ No

If yes, please list the name and address for each:

1. Name Empire Soils Investigations , Inc.
   Address 303 Cleveland Avenue
   Highland Park, New Jersey 08904

2. Name Taylor, Wiseman & Taylor
   Address 22A Distribution Boulevard
   Edison, New Jersey 08817

3. Name OBG Laboratories, Inc.
   Address 1304 Buckley Road
   Syracuse, NY 13221

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION III

Does party completing this form have any subsidiaries which you have the ability to control? ☒ Yes ☐ No

If yes, please list the name and address for each:

1. Name Justin & Courtney, Inc.

   Address 1304 Buckley Road

   Syracuse, NY 13221

2. Name _____

   Address _____

3. Name _____

   Address _____

SECTION IV

If party completing this form is the bidder, this section must be completed. If bidder is a joint venture, this section must be completed by one of the venture partners.

Is bidder proposing to use subcontractor(s) in the performance of this contract? ☒ Yes ☐ No

If yes, please list the name and address for each:

1. Name OBG Operations, Inc.

   Address 1304 Buckley Road

   Syracuse, NY 13221

2. Name _____

   Address _____

3. Name _____

   Address _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION V

Are there any pending indictments or have there been any convictions for any criminal offenses in any State or Federal jurisdiction involving any person or legal entity listed in Sections I, II and III of this form?

☐ Yes ☒ No

If yes, state for each such indictment or conviction:

A. The name of the person or entity and whether there is a pending indictment or a conviction

B. The specific offense for which the indictment was returned or the conviction entered, giving statutory citation where applicable

C. The date of the indictment of conviction

D. The name of the jurisdiction which returned the indictment, and the name of the court if there was a conviction

E. The specific disposition of the proceedings, if completed, including any sentence, penalty, injunction, forfeiture, suspension or revocation

F. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VI

State whether any federal, state or local governmental license, permit or other similar authorization to collect, transport, store, treat or dispose of waste of any type, or hazardous substances of any type, held or applied for by any person or entity listed in Sections I, II or III above, is now suspended or revoked, whether or not by consent, or is the subject of any pending proceedings specifically seeking or litigating the issue of suspension or revocation.

☐ Yes ☒ No

If yes, state as to each such suspension, revocation or proceeding:

A. The name of the person or entity affected by the action

B. The specific action taken or proceedings pending, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency

E. The specific dispostion of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VII

State whether any person or entity listed in Sections I, II and III above is now enjoined or otherwise prevented from engaging in the collection, transportation, storage, treatment or disposal of any type of waste or hazardous substance, generally or with respect to one or more specific facilities or locales, by any federal, state or local court or by any federal, state or local court or by any federal, state or local governmental agency, whether or not by consent.

☐ Yes ☒ No

If yes, state as to each such injunction or other such action:

A. The name of the person or entity affected

B. The specific action taken, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency or court

E. The specific disposition of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VIII

State whether any person or entity listed in Sections I, II or III above is now debarred or suspended from contracting with any federal, state or local government agency.

☐ Yes ☒ No

If yes, state as to each:

A. The name of the person or entity affected

B. The name of the jurisdiction and agency issuing the debarment or suspension

C. The grounds alleged by the agency for action taken

D. The disposition including length of time the suspension or debarment will be effective

E. Mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION IX

CERTIFICATION OF COMPLETENESS AND ACCURACY

The proprietor, partnership or corporation submitting this form is responsible for the accuracy of the information submitted herein. Omissions or inaccuracies may result in suspension or debarment from State contracting as to the party submitting this form, as well as termination of any contract awarded hereunder. Incomplete or inaccurate information from any bidder, venture partner or proposed subcontractor may result in rejection of the related bid proposal.

The undersigned is a director, officer, partner or proprietor of the bidder, venture partner or proposed subcontractor submitting this disclosure form, and has made diligent inquiry in order to insure the completeness and accuracy of the information given above. The undersigned hereby certifies that the foregoing statements made by me are true to the best of my information and belief. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

7/24/87
Date Signed

Cornelius B. Murphy, Jr.
Signature

Cornelius B. Murphy, Jr.
Type or Print Name

Senior Vice President
Type or Print Title

O'Brien & Gere Engineers, Inc.
Name of Proprietorship, Partnership or Corporation submitting form

Witness:

Norinne S. Polmanteer
Signature

Norinne S. Polmanteer
Type or Print Name

July 24, 1987
Date Signed

(Form Revised May 22, 1985)

CONSENT TO INVESTIGATION FOR PURPOSES OF EXECUTIVE ORDER NO. 34, 1976

To be completed by each bidder, each venture partner and each proposed subcontractor.

WHEREAS, the Division of Purchase and Property, in the Department of the Treasury of the State of New Jersey, has solicited Bid Proposals for a contract for

Combe Fill South Landfill Remedial Design pursuant to Term Contract X-464

WHEREAS, bid proposals from bidders as to whom grounds for debarment or suspension exist pursuant to Executive Order 34 may be rejected, and suspension and debarment proceeding commenced against said bidders, and

WHEREAS, the Director of the Division of Purchase and Property may request that the Attorney General of New Jersey investigate bidders submitting a bid proposal to determine whether any such grounds exist.

NOW THEREFORE (Name of Firm) O'Brien & Gere Engineers, Inc.
hereby consents to an investigation conducted by the New Jersey Attorney General's Office to determine whether any grounds exist to debar or suspend the bidder from contracting pursuant to Executive Order No. 34, 1976, and any applicable regulations adopted pursuant thereto, such investigation to include whether such grounds exist as to any of the bidder's affiliates as the latter term is defined by said Executive Order 34. The undersigned consents to the use and consideration by the New Jersey Attorney General's Office for the above described purposes of any information pertinent to said investigation which may be derived from the investigatory arm of any state or federal governmental agency including, but not limited to, any information pertaining to criminal history.

O'Brien & Gere Engineers, Inc.
Name of Firm

Cornelius B. Murphy Jr
Signature

7/24/87
Date Signed

Cornelius B. Murphy, Jr.
Type or Print Name

Senior Vice President
Type or Print Title

If the signing party is a corporation, the corporate seal must be affixed and this consent must be accompanied by a duly adopted resolution of the corporation authorizing the party signing to execute this consent.

(Form Revised May 3, 1984)

CERTIFICATION OF RESOLUTION

In accordance with a general Resolution (a copy of which is attached hereto) duly passed on December 11, 1979 by the Board of Directors of O'Brien & Gere Engineers, Inc., a domestic corporation duly incorporated in the State of New York, I hereby certify that Cornelius B. Murphy, Jr., Ph.D., Senior Vice President of said Corporation, is authorized to execute on behalf of said Corporation a Consent to Investigation for Purposes of Executive Order No. 34, 1976.

O'BRIEN & GERE ENGINEERS, INC.

Alan N. Culbertson
Assistant Secretary

Sworn to before me this 23rd day of July, 1987.

Notary Public

NORINNE S. POLMANTEER
Notary Public in the State of New York
Qualified in Onondaga County No. 4803622
My Commission Expires March 30, 1989

CERTIFICATION OF RESOLUTION

RESOLVED, that the President of this Corporation be and hereby is authorized to execute any and all instruments on behalf of the Corporation, and it was further

RESOLVED, that, in the absence of the President, the Senior Vice President whose responsibilities are most directly related to the subject of said instrument be and hereby is authorized to effect said execution, and it was further

RESOLVED, that, in the absence of the President and said Senior Vice President, any other Senior Vice President be and hereby is authorized to effect said execution, and it was further

RESOLVED, that, in the absence of the President and all Senior Vice Presidents, the Division Vice President whose responsibilities are most directly related to the subject of said instrument be and hereby is authorized to effect said execution.

I, Alan N. Culbertson, Assistant Secretary of O'Brien & Gere Engineers, Inc., a New York corporation, hereby certify that the foregoing is a true copy of the Resolution adopted by its Board of Directors at a meeting of the Board held at 1304 Buckley Road, Syracuse, New York on December 11, 1979 and that said Resolution remains in effect.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of said Corporation to be affixed hereto this 23rd day of July, 1987.

Alan N. Culbertson
Assistant Secretary

(Corporate Seal)

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

HAZARDOUS WASTE CONTRACTOR DISCLOSURE FORM*

(Separate copies to be completed by Bidder, each venture partner if bidder is a joint venture and each proposed subcontractor)

SECTION I

A. Name of corporation, partnership or proprietorship completing this form

Empire Soils Investigations, Inc.

If party completing this form is a venture partner, state name of the Joint Venture submitting a bid proposal

If party completing this form is a proposed subcontractor, state name of the proposed Prime Contractor who is submitting the bid proposal

O'Brien & Gere Engineers

B. Party completing this form is a: ☐ Sole Proprietorship ☐ Partnership ☒ Corporation

SECTION II

A. If a sole proprietorship, give the following information:

1. Full business name _____
2. Business address _____
3. Full name of proprietor if different from No. 1 (Include middle initial) _____
4. Home address _____
5. Date of birth: _____ (Statement of age is not sufficient)
6. Social Security Number _____

* *This form, the attached Certification of Completeness and Accuracy (Section IX) and the attached Consent to Investigation must be separately completed and dated for each bid proposal. Photocopies or duplicates of forms submitted in response to previous RFP's will not be responsive.*

(Form Revised May 22, 1985)

SECTION II *(Continued)*

B. If a partnership, give the following information for each partner.

1. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

2. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

3. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) Bent L. Thomsen, P.E.

   Business address 119 West South Street

   Groton, New York 13073

   Home address 42 North Main Street

   Homer, New York 13077

   Date of birth 8/1/33
   (Statement of age is not sufficient)

   Social Security Number 161-3406-48

2. Full name (include MI) Joseph J. Aleba, Vice President

   Business address 105 Corona Avenue

   Groton, New York 13073

   Home address Hickory Street

   Whitney Point, New York 13862

   Date of birth 10/21/25
   (Statement of age is not sufficient)

   Social Security Number 120-2067-52

3. Full name (include MI) W. Dean Anderson, Executive Vice President

   Business address 300 McGaw Drive-Raritan Center

   Edison, New Jersey 08837

   Home address 938 Middletown-Lincroft Road

   Middletown, New Jersey 08837

   Date of birth 11/1/35
   (Statement of age is not sufficient)

   Social Security Number 131-28-8578

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION III

Does party completing this form have any subsidiaries which you have the ability to control? ☒ Yes ☐ No

If yes, please list the name and address for each:

1. Name Geo-Facts, Inc.

   Address 105 Corona Avenue

   Groton, New York 13073

2. Name _____

   Address _____

3. Name _____

   Address _____

SECTION IV

If party completing this form is the bidder, this section must be completed. If bidder is a joint venture, this section must be completed by one of the venture partners.

Is bidder proposing to use subcontractor(s) in the performance of this contract? ☐ Yes ☒ No

If yes, please list the name and address for each:

1. Name _____

   Address _____

2. Name _____

   Address _____

3. Name _____

   Address _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION V

Are there any pending indictments or have there been any convictions for any criminal offenses in any State or Federal jurisdiction involving any person or legal entity listed in Sections I, II and III of this form?

☐ Yes ☒ No

If yes, state for each such indictment or conviction:

A. The name of the person or entity and whether there is a pending indictment or a conviction

B. The specific offense for which the indictment was returned or the conviction entered, giving statutory citation where applicable

C. The date of the indictment of conviction

D. The name of the jurisdiction which returned the indictment, and the name of the court if there was a conviction

E. The specific disposition of the proceedings, if completed, including any sentence, penalty, injunction, forfeiture, suspension or revocation

F. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VI

State whether any federal, state or local governmental license, permit or other similar authorization to collect, transport, store, treat or dispose of waste of any type, or hazardous substances of any type, held or applied for by any person or entity listed in Sections I, II or III above, is now suspended or revoked, whether or not by consent, or is the subject of any pending proceedings specifically seeking or litigating the issue of suspension or revocation.

☐ Yes ☒ No

If yes, state as to each such suspension, revocation or proceeding:

A. The name of the person or entity affected by the action

B. The specific action taken or proceedings pending, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency

E. The specific dispostion of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VII

State whether any person or entity listed in Sections I, II and III above is now enjoined or otherwise prevented from engaging in the collection, transportation, storage, treatment or disposal of any type of waste or hazardous substance, generally or with respect to one or more specific facilities or locales, by any federal, state or local court or by any federal, state or local court or by any federal, state or local governmental agency, whether or not by consent.

☐ Yes ☒ No

If yes, state as to each such injunction or other such action:

A. The name of the person or entity affected

B. The specific action taken, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency or court

E. The specific disposition of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

SECTION VIII

State whether any person or entity listed in Sections I, II or III above is now debarred or suspended from contracting with any federal, state or local government agency.

☐ Yes ☒ No

If yes, state as to each:

A. The name of the person or entity affected

B. The name of the jurisdiction and agency issuing the debarment or suspension

C. The grounds alleged by the agency for action taken

D. The disposition including length of time the suspension or debarment will be effective

E. Mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION IX

CERTIFICATION OF COMPLETENESS AND ACCURACY

The proprietor, partnership or corporation submitting this form is responsible for the accuracy of the information submitted herein. Omissions or inaccuracies may result in suspension or debarment from State contracting as to the party submitting this form, as well as termination of any contract awarded hereunder. Incomplete or inaccurate information from any bidder, venture partner or proposed subcontractor may result in rejection of the related bid proposal.

The undersigned is a director, officer, partner or proprietor of the bidder, venture partner or proposed subcontractor submitting this disclosure form, and has made diligent inquiry in order to insure the completeness and accuracy of the information given above. The undersigned hereby certifies that the foregoing statements made by me are true to the best of my information and belief. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

7/24/87
Date Signed

W. Dean Anderson
Signature

W. Dean Anderson
Type or Print Name

Executive Vice President
Type or Print Title

Empire Soils Investigations, Inc.
Name of Proprietorship, Partnership or Corporation submitting form

Witness:

Vicky L. Alberalla
Signature

Vicky L. Alberalla
Type or Print Name

7-24-87
Date Signed

(Form Revised May 22, 1985)

CONSENT TO INVESTIGATION FOR PURPOSES OF EXECUTIVE ORDER NO. 34, 1976

To be completed by each bidder, each venture partner and each proposed subcontractor.

WHEREAS, the Division of Purchase and Property, in the Department of the Treasury of the State of New Jersey, has solicited Bid Proposals for a contract for

NJDEP X-312

WHEREAS, bid proposals from bidders as to whom grounds for debarment or suspension exist pursuant to Executive Order 34 may be rejected, and suspension and debarment proceeding commenced against said bidders, and

WHEREAS, the Director of the Division of Purchase and Property may request that the Attorney General of New Jersey investigate bidders submitting a bid proposal to determine whether any such grounds exist.

NOW THEREFORE (Name of Firm) Empire Soils Investigations, Inc. hereby consents to an investigation conducted by the New Jersey Attorney General's Office to determine whether any grounds exist to debar or suspend the bidder from contracting pursuant to Executive Order No. 34, 1976, and any applicable regulations adopted pursuant thereto, such investigation to include whether such grounds exist as to any of the bidder's affiliates as the latter term is defined by said Executive Order 34. The undersigned consents to the use and consideration by the New Jersey Attorney General's Office for the above described purposes of any information pertinent to said investigation which may be derived from the investigatory arm of any state or federal governmental agency including, but not limited to, any information pertaining to criminal history.

Empire Soils Investigations, Inc.
Name of Firm

W. Dean Anderson
Signature

2/24/87
Date Signed

W. Dean Anderson
Type or Print Name

Executive Vice President
Type or Print Title

If the signing party is a corporation, the corporate seal must be affixed and this consent must be accompanied by a duly adopted resolution of the corporation authorizing the party signing to execute this consent.

(Form Revised May 3, 1984)

EMPIRE
SOILS INVESTIGATIONS INC

A meeting of the Board of Directors of Empire Soils Investigations, Inc. was held at the Corporate Office, 105 Corona Avenue, Groton, New York on July 20, 1983. The following resolution was adopted.

W. Dean Anderson, Executive Vice President was duly authorized to sign proposals and contracts on behalf of Empire Soils Investigations, Inc. This resolution was approved by all Directors.

Karl F. Stamm

Karl F. Stamm
Director, Treasurer

HAZARDOUS WASTE CONTRACTOR DISCLOSURE FORM*

(Separate copies to be completed by Bidder, each venture partner if bidder is a joint venture and each proposed subcontractor)

SECTION I

A. Name of corporation, partnership or proprietorship completing this form

Taylor, Wiseman & Taylor

If party completing this form is a venture partner, state name of the Joint Venture submitting a bid proposal

If party completing this form is a proposed subcontractor, state name of the proposed Prime Contractor who is submitting the bid proposal

B. Party completing this form is a: ☐ Sole Proprietorship ☐ Partnership ☒ Corporation

SECTION II

A. If a sole proprietorship, give the following information:

1. Full business name
2. Business address
3. Full name of proprietor if different from No. 1 (Include middle initial)
4. Home address
5. Date of birth:
   (Statement of age is not sufficient)
6. Social Security Number

* *This form, the attached Certification of Completeness and Accuracy (Section IX) and the attached Consent to Investigation must be separately completed and dated for each bid proposal. Photocopies or duplicates of forms submitted in response to previous RFP's will not be responsive.*

(Form Revised May 22, 1985)

SECTION II *(Continued)*

B. If a partnership, give the following information for each partner.

1. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

2. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

3. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) Joseph F. Wiseman

   Business address 306 Fellowship Road
   Mount Laurel, NJ 08054

   Home address 39 Wagon Bridge Run
   Moorestown, NJ 08057

   Date of birth (Statement of age is not sufficient) September 30, 1934

   Social Security Number 140-26-9768

2. Full name (include MI) Harry O. Bateman

   Business address 306 Fellowship Road
   Mt. Laurel, NJ 08054

   Home address 71 Westbrook Drive
   Moorestown, NJ 08057

   Date of birth (Statement of age is not sufficient) June 20, 1934

   Social Security Number 148-22-0428

3. Full name (include MI) Eugene W. Noll

   Business address 306 Fellowship Road
   Mount Laurel, NJ 08054

   Home address 5 Pointe View Circle
   Medford, NJ 08055

   Date of birth (Statement of age is not sufficient) May 26, 1931

   Social Security Number 102-24-6956

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

4. Full name (include MI) Angelo J. Caracciolo

Business address 306 Fellowship Road
Mount Laurel, NJ 08054

Home address 119 Dearborne Avenue
Blackwood, NJ 08012

Date of birth January 28, 1941
(Statement of age is not sufficient)

Social Security Number 136-30-6761

5. Full name (include MI) Jeffrey P. Taylor

Business address 306 Fellowship Road
Mount Laurel, NJ 08054

Home address 306 Colonial Avenue
Moorestown, NJ 08057

Date of birth December 25, 1951
(Statement of age is not sufficient)

Social Security Number 148-46-2532

Full name (include MI) _____

Business address _____

Home address _____

Date of birth _____
(Statement of age is not sufficient)

Social Security Number _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION III

Does party completing this form have any subsidiaries which you have the ability to control? ☐ Yes ☒ No

If yes, please list the name and address for each:

1. Name _____

   Address _____

   _____

2. Name _____

   Address _____

   _____

3. Name _____

   Address _____

   _____

SECTION IV

If party completing this form is the bidder, this section must be completed. If bidder is a joint venture, this section must be completed by one of the venture partners.

Is bidder proposing to use subcontractor(s) in the performance of this contract? ☐ Yes ☒ No

If yes, please list the name and address for each:

1. Name _____

   Address _____

   _____

2. Name _____

   Address _____

   _____

3. Name _____

   Address _____

   _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION V

Are there any pending indictments or have there been any convictions for any criminal offenses in any State or Federal jurisdiction involving any person or legal entity listed in Sections I, II and III of this form?

☐ Yes ☒ No

If yes, state for each such indictment or conviction:

A. The name of the person or entity and whether there is a pending indictment or a conviction

B. The specific offense for which the indictment was returned or the conviction entered, giving statutory citation where applicable

C. The date of the indictment of conviction

D. The name of the jurisdiction which returned the indictment, and the name of the court if there was a conviction

E. The specific disposition of the proceedings, if completed, including any sentence, penalty, injunction, forfeiture, suspension or revocation

F. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VI

State whether any federal, state or local governmental license, permit or other similar authorization to collect, transport, store, treat or dispose of waste of any type, or hazardous substances of any type, held or applied for by any person or entity listed in Sections I, II or III above, is now suspended or revoked, whether or not by consent, or is the subject of any pending proceedings specifically seeking or litigating the issue of suspension or revocation.

☐ Yes ☒ No

If yes, state as to each such suspension, revocation or proceeding:

A. The name of the person or entity affected by the action

B. The specific action taken or proceedings pending, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency

E. The specific dispostion of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VII

State whether any person or entity listed in Sections I, II and III above is now enjoined or otherwise prevented from engaging in the collection, transportation, storage, treatment or disposal of any type of waste or hazardous substance, generally or with respect to one or more specific facilities or locales, by any federal, state or local court or by any federal, state or local court or by any federal, state or local governmental agency, whether or not by consent.

☐ Yes ☒ No

If yes, state as to each such injunction or other such action:

A. The name of the person or entity affected

B. The specific action taken, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency or court

E. The specific disposition of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VIII

State whether any person or entity listed in Sections I, II or III above is now debarred or suspended from contracting with any federal, state or local government agency.

☐ Yes ☒ No

If yes, state as to each:

A. The name of the person or entity affected

_____

B. The name of the jurisdiction and agency issuing the debarment or suspension

_____

C. The grounds alleged by the agency for action taken

_____

_____

D. The disposition including length of time the suspension or debarment will be effective

_____

E. Mitigating circumstances or other relevant information

_____

_____

_____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION IX

CERTIFICATION OF COMPLETENESS AND ACCURACY

The proprietor, partnership or corporation submitting this form is responsible for the accuracy of the information submitted herein. Omissions or inaccuracies may result in suspension or debarment from State contracting as to the party submitting this form, as well as termination of any contract awarded hereunder. Incomplete or inaccurate information from any bidder, venture partner or proposed sub-contractor may result in rejection of the related bid proposal.

The undersigned is a director, officer, partner or proprietor of the bidder, venture partner or proposed subcontractor submitting this disclosure form, and has made diligent inquiry in order to insure the completeness and accuracy of the information given above. The undersigned hereby certifies that the foregoing statements made by me are true to the best of my information and belief. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

7/23/87
Date Signed

Signature

Angelo J. Caracciolo
Type or Print Name

Vice President
Type or Print Title

Taylor, Wiseman and Taylor
Name of Proprietorship, Partnership or Corporation submitting form

Witness:

Signature

Robert A. Ryan
Type or Print Name

7/23/87
Date Signed

(Form Revised May 22, 1985)

HAZARDOUS WASTE CONTRACTOR DISCLOSURE FORM*

(Separate copies to be completed by Bidder, each venture partner if bidder is a joint venture and each proposed subcontractor)

SECTION I

A. Name of corporation, partnership or proprietorship completing this form

OBG Laboratories, Inc.

If party completing this form is a venture partner, state name of the Joint Venture submitting a bid proposal

N/A

If party completing this form is a proposed subcontractor, state name of the proposed Prime Contractor who is submitting the bid proposal

N/A

B. Party completing this form is a: ☐ Sole Proprietorship ☐ Partnership ☒ Corporation

SECTION II

A. If a sole proprietorship, give the following information:

1. Full business name N/A
2. Business address
3. Full name of proprietor if different from No. 1 (Include middle initial)
4. Home address
5. Date of birth: (Statement of age is not sufficient)
6. Social Security Number

* *This form, the attached Certification of Completeness and Accuracy (Section IX) and the attached Consent to Investigation must be separately completed and dated for each bid proposal. Photocopies or duplicates of forms submitted in response to previous RFP's will not be responsive.*

(Form Revised May 22, 1985)

SECTION II *(Continued)*

B. If a partnership, give the following information for each partner.

1. Full name (include MI) N/A

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

2. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

3. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) John R. Loveland

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 150 Cedar Heights Drive
   Jamesville, NY 13078

   Date of birth 9/24/37
   (Statement of age is not sufficient)

   Social Security Number 108-30-4382

2. Full name (include MI) Cornelius B. Murphy, Jr.

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 4454 Kasson Road
   Syracuse, NY 13215

   Date of birth 7/1/44
   (Statement of age is not sufficient)

   Social Security Number 090-36-3993

3. Full name (include MI) Stephen A. Kuruc, Jr.

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 4951 Harvest Lane
   Liverpool, NY 13088

   Date of birth 11/23/37
   (Statement of age is not sufficient)

   Social Security Number 112-30-0992

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) Alan N. Culbertson

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 116 Will-O-Wind Dr.
   Jamesville, NY 13078

   Date of birth 11/22/48
   (Statement of age is not sufficient)

   Social Security Number 165-38-2914

2. Full name (include MI) Peter C. Johnson

   Business address One Valley Square, Suite 200
   512 Township Line Road, Blue Bell, PA

   Home address 1512 N. Beacham Dr.
   Ambler, PA 19002

   Date of birth 10/19/40
   (Statement of age is not sufficient)

   Social Security Number 099-32-2930

3. Full name (include MI) Thomas B. Quinn

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 4317 Cleveland Rd.
   Syracuse, NY 13215

   Date of birth 5/15/47
   (Statement of age is not sufficient)

   Social Security Number 054-36-4137

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION III

Does party completing this form have any subsidiaries which you have the ability to control? ☐ Yes ☒ No

If yes, please list the name and address for each:

1. Name _____

   Address _____

   _____

2. Name _____

   Address _____

   _____

3. Name _____

   Address _____

   _____

SECTION IV

If party completing this form is the bidder, this section must be completed. If bidder is a joint venture, this section must be completed by one of the venture partners.

Is bidder proposing to use subcontractor(s) in the performance of this contract? ☐ Yes ☒ No

If yes, please list the name and address for each:

1. Name N/A

   Address _____

   _____

2. Name _____

   Address _____

   _____

3. Name _____

   Address _____

   _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION V

Are there any pending indictments or have there been any convictions for any criminal offenses in any State or Federal jurisdiction involving any person or legal entity listed in Sections I, II and III of this form?

☐ Yes ☒ No

If yes, state for each such indictment or conviction:

A. The name of the person or entity and whether there is a pending indictment or a conviction

B. The specific offense for which the indictment was returned or the conviction entered, giving statutory citation where applicable

C. The date of the indictment of conviction

D. The name of the jurisdiction which returned the indictment, and the name of the court if there was a conviction

E. The specific disposition of the proceedings, if completed, including any sentence, penalty, injunction, forfeiture, suspension or revocation

F. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VI

State whether any federal, state or local governmental license, permit or other similar authorization to collect, transport, store, treat or dispose of waste of any type, or hazardous substances of any type, held or applied for by any person or entity listed in Sections I, II or III above, is now suspended or revoked, whether or not by consent, or is the subject of any pending proceedings specifically seeking or litigating the issue of suspension or revocation.

☐ Yes ☒ No

If yes, state as to each such suspension, revocation or proceeding:

A. The name of the person or entity affected by the action

B. The specific action taken or proceedings pending, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency

E. The specific dispostion of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VII

State whether any person or entity listed in Sections I, II and III above is now enjoined or otherwise prevented from engaging in the collection, transportation, storage, treatment or disposal of any type of waste or hazardous substance, generally or with respect to one or more specific facilities or locales, by any federal, state or local court or by any federal, state or local court or by any federal, state or local governmental agency, whether or not by consent.

☐ Yes ☒ No

If yes, state as to each such injunction or other such action:

A. The name of the person or entity affected

B. The specific action taken, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency or court

E. The specific disposition of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VIII

State whether any person or entity listed in Sections I, II or III above is now debarred or suspended from contracting with any federal, state or local government agency.

☐ Yes ☒ No

If yes, state as to each:

A. The name of the person or entity affected

_____

B. The name of the jurisdiction and agency issuing the debarment or suspension

_____

C. The grounds alleged by the agency for action taken

_____

_____

D. The disposition including length of time the suspension or debarment will be effective

_____

E. Mitigating circumstances or other relevant information

_____

_____

_____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION IX

CERTIFICATION OF COMPLETENESS AND ACCURACY

The proprietor, partnership or corporation submitting this form is responsible for the accuracy of the information submitted herein. Omissions or inaccuracies may result in suspension or debarment from State contracting as to the party submitting this form, as well as termination of any contract awarded hereunder. Incomplete or inaccurate information from any bidder, venture partner or proposed subcontractor may result in rejection of the related bid proposal.

The undersigned is a director, officer, partner or proprietor of the bidder, venture partner or proposed subcontractor submitting this disclosure form, and has made diligent inquiry in order to insure the completeness and accuracy of the information given above. The undersigned hereby certifies that the foregoing statements made by me are true to the best of my information and belief. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

7/24/87
Date Signed

Cornelius B. Murphy Jr.
Signature

Cornelius B. Murphy, Jr.
Type or Print Name

President
Type or Print Title

OBG Laboratories, Inc.
Name of Proprietorship, Partnership or Corporation submitting form

Witness:

Norinne S. Polmanteer
Signature

Norinne S. Polmanteer
Type or Print Name

July 24, 1987
Date Signed

(Form Revised May 22, 1985)

CONSENT TO INVESTIGATION FOR PURPOSES OF EXECUTIVE ORDER NO. 34, 1976

To be completed by each bidder, each venture partner and each proposed subcontractor.

WHEREAS, the Division of Purchase and Property, in the Department of the Treasury of the State of New Jersey, has solicited Bid Proposals for a contract for

Combe Fill South Landfill Remedial Design pursuant to Term Contract X-464

WHEREAS, bid proposals from bidders as to whom grounds for debarment or suspension exist pursuant to Executive Order 34 may be rejected, and suspension and debarment proceeding commenced against said bidders, and

WHEREAS, the Director of the Division of Purchase and Property may request that the Attorney General of New Jersey investigate bidders submitting a bid proposal to determine whether any such grounds exist.

NOW THEREFORE (Name of Firm) OBG Laboratories, Inc.
hereby consents to an investigation conducted by the New Jersey Attorney General's Office to determine whether any grounds exist to debar or suspend the bidder from contracting pursuant to Executive Order No. 34, 1976, and any applicable regulations adopted pursuant thereto, such investigation to include whether such grounds exist as to any of the bidder's affiliates as the latter term is defined by said Executive Order 34. The undersigned consents to the use and consideration by the New Jersey Attorney General's Office for the above described purposes of any information pertinent to said investigation which may be derived from the investigatory arm of any state or federal governmental agency including, but not limited to, any information pertaining to criminal history.

OBG Laboratories, Inc.
Name of Firm

Cornelius B. Murphy Jr.
Signature

7/24/87
Date Signed

Cornelius B. Murphy, Jr.
Type or Print Name

President
Type or Print Title

If the signing party is a corporation, the corporate seal must be affixed and this consent must be accompanied by a duly adopted resolution of the corporation authorizing the party signing to execute this consent.

(Form Revised May 3, 1984)

HAZARDOUS WASTE CONTRACTOR DISCLOSURE FORM*

(Separate copies to be completed by Bidder, each venture partner if bidder is a joint venture and each proposed subcontractor)

SECTION I

A. Name of corporation, partnership or proprietorship completing this form

OBG Operations, Inc.

If party completing this form is a venture partner, state name of the Joint Venture submitting a bid proposal

N/A

If party completing this form is a proposed subcontractor, state name of the proposed Prime Contractor who is submitting the bid proposal

N/A

B. Party completing this form is a: ☐ Sole Proprietorship ☐ Partnership ☒ Corporation

SECTION II

A. If a sole proprietorship, give the following information:

1. Full business name N/A
2. Business address _____
3. Full name of proprietor if different from No. 1 (Include middle initial) _____
4. Home address _____
5. Date of birth: _____
   (Statement of age is not sufficient)
6. Social Security Number _____

* *This form, the attached Certification of Completeness and Accuracy (Section IX) and the attached Consent to Investigation must be separately completed and dated for each bid proposal. Photocopies or duplicates of forms submitted in response to previous RFP's will not be responsive.*

(Form Revised May 22, 1985)

SECTION II *(Continued)*

B. If a partnership, give the following information for each partner.

1. Full name (include MI) N/A

Business address _____

_____

Home address _____

_____

Date of birth _____
(Statement of age is not sufficient)

Social Security Number _____

2. Full name (include MI) _____

Business address _____

_____

Home address _____

_____

Date of birth _____
(Statement of age is not sufficient)

Social Security Number _____

3. Full name (include MI) _____

Business address _____

_____

Home address _____

_____

Date of birth _____
(Statement of age is not sufficient)

Social Security Number _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) John R. Loveland

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 150 Cedar Heights Drive
   Jamesville, NY 13078

   Date of birth 9/24/37
   (Statement of age is not sufficient)

   Social Security Number 108-30-4382

2. Full name (include MI) Richard L. Elander

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 115 Kennedy Lane
   No. Syracuse, NY 13066

   Date of birth 3/27/41
   (Statement of age is not sufficient)

   Social Security Number 061-32-4247

3. Full name (include MI) Brien N. Gidlow

   Business address 1304 Buckley Road
   Syracuse, NY 13221

   Home address 9 Collin Avenue
   Fayetteville, NY 13066

   Date of birth 4/9/47
   (Statement of age is not sufficient)

   Social Security Number 070-40-0486

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) Stephen A. Kuruc, Jr.

   Business address 1304 Buckley Road

   Syracuse, NY 13221

   Home address 4951 Harvest Lane

   Liverpool, NY 13088

   Date of birth 11/23/37
   (Statement of age is not sufficient)

   Social Security Number 112-30-0992

2. Full name (include MI) Alan N. Culbertson

   Business address 1304 Buckley Road

   Syracuse, NY 13221

   Home address 116 Will-O-Wind Dr.

   Jamesville, NY 13078

   Date of birth 11/22/48
   (Statement of age is not sufficient)

   Social Security Number 165-38-2914

3. Full name (include MI) Peter C. Johnson

   Business address One Valley Square, Suite 200

   512 Township Line Rd., Blue Bell, PA 19422

   Home address 1512 N. Beacham Dr.

   Ambler, PA 19002

   Date of birth 10/19/40
   (Statement of age is not sufficient)

   Social Security Number 099-32-2930

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION II *(Continued)*

C. If a corporation, give the following information for each Responsible Operating Officer, each Director and each person or corporation holding 10% or more of the equity or debt liability of the corporation completing this form (other than a banking or other licensed lending institution) or otherwise having the ability to control said corporation.

1. Full name (include MI) Thomas B. Quinn

   Business address 1304 Buckley Road

   Syracuse, NY 13221

   Home address 4317 Cleveland Rd.

   Syracuse, NY 13215

   Date of birth 5/15/47
   (Statement of age is not sufficient)

   Social Security Number 054-36-4137

2. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

3. Full name (include MI) _____

   Business address _____

   _____

   Home address _____

   _____

   Date of birth _____
   (Statement of age is not sufficient)

   Social Security Number _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION III

Does party completing this form have any subsidiaries which you have the ability to control? ☐ Yes ☒ No

If yes, please list the name and address for each:

1. Name _____

   Address _____

   _____

2. Name _____

   Address _____

   _____

3. Name _____

   Address _____

   _____

SECTION IV

If party completing this form is the bidder, this section must be completed. If bidder is a joint venture, this section must be completed by one of the venture partners.

Is bidder proposing to use subcontractor(s) in the performance of this contract? ☐ Yes ☒ No

If yes, please list the name and address for each:

1. Name N/A

   Address _____

   _____

2. Name _____

   Address _____

   _____

3. Name _____

   Address _____

   _____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION V

Are there any pending indictments or have there been any convictions for any criminal offenses in any State or Federal jurisdiction involving any person or legal entity listed in Sections I, II and III of this form?

☐ Yes ☒ No

If yes, state for each such indictment or conviction:

A. The name of the person or entity and whether there is a pending indictment or a conviction

B. The specific offense for which the indictment was returned or the conviction entered, giving statutory citation where applicable

C. The date of the indictment of conviction

D. The name of the jurisdiction which returned the indictment, and the name of the court if there was a conviction

E. The specific disposition of the proceedings, if completed, including any sentence, penalty, injunction, forfeiture, suspension or revocation

F. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VI

State whether any federal, state or local governmental license, permit or other similar authorization to collect, transport, store, treat or dispose of waste of any type, or hazardous substances of any type, held or applied for by any person or entity listed in Sections I, II or III above, is now suspended or revoked, whether or not by consent, or is the subject of any pending proceedings specifically seeking or litigating the issue of suspension or revocation.

☐ Yes ☒ No

If yes, state as to each such suspension, revocation or proceeding:

A. The name of the person or entity affected by the action

B. The specific action taken or proceedings pending, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency

E. The specific dispostion of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VII

State whether any person or entity listed in Sections I, II and III above is now enjoined or otherwise prevented from engaging in the collection, transportation, storage, treatment or disposal of any type of waste or hazardous substance, generally or with respect to one or more specific facilities or locales, by any federal, state or local court or by any federal, state or local court or by any federal, state or local governmental agency, whether or not by consent.

☐ Yes ☒ No

If yes, state as to each such injunction or other such action:

A. The name of the person or entity affected

B. The specific action taken, giving citations to applicable statutes and regulations

C. The specific grounds alleged for the action taken or proceedings pending

D. The name of the jurisdiction and the governmental agency or court

E. The specific disposition of the proceedings if completed

F. The names and locations of all facilities affected by the action

G. Any mitigating circumstances or other relevant information

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION VIII

State whether any person or entity listed in Sections I, II or III above is now debarred or suspended from contracting with any federal, state or local government agency.

☐ Yes ☒ No

If yes, state as to each:

A. The name of the person or entity affected

_____

B. The name of the jurisdiction and agency issuing the debarment or suspension

_____

C. The grounds alleged by the agency for action taken

_____

_____

D. The disposition including length of time the suspension or debarment will be effective

_____

E. Mitigating circumstances or other relevant information

_____

_____

_____

[If necessary add additional sheets giving the additional information using the same format as above]

(Form Revised May 22, 1985)

SECTION IX

CERTIFICATION OF COMPLETENESS AND ACCURACY

The proprietor, partnership or corporation submitting this form is responsible for the accuracy of the information submitted herein. Omissions or inaccuracies may result in suspension or debarment from State contracting as to the party submitting this form, as well as termination of any contract awarded hereunder. Incomplete or inaccurate information from any bidder, venture partner or proposed subcontractor may result in rejection of the related bid proposal.

The undersigned is a director, officer, partner or proprietor of the bidder, venture partner or proposed subcontractor submitting this disclosure form, and has made diligent inquiry in order to insure the completeness and accuracy of the information given above. The undersigned hereby certifies that the foregoing statements made by me are true to the best of my information and belief. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

July 24, 1987
Date Signed

Signature

Richard L. Elander
Type or Print Name

President
Type or Print Title

OBG Operations, Inc.
Name of Proprietorship, Partnership or Corporation submitting form

Witness:

Signature

Norinne S. Polmanteer
Type or Print Name

July 24, 1987
Date Signed

(Form Revised May 22, 1985)

CONSENT TO INVESTIGATION FOR PURPOSES OF EXECUTIVE ORDER NO. 34, 1976

To be completed by each bidder, each venture partner and each proposed subcontractor.

WHEREAS, the Division of Purchase and Property, in the Department of the Treasury of the State of New Jersey, has solicited Bid Proposals for a contract for

Combe Fill South Landfill Remedial Design pursuant to Term Contract X-464

WHEREAS, bid proposals from bidders as to whom grounds for debarment or suspension exist pursuant to Executive Order 34 may be rejected, and suspension and debarment proceeding commenced against said bidders, and

WHEREAS, the Director of the Division of Purchase and Property may request that the Attorney General of New Jersey investigate bidders submitting a bid proposal to determine whether any such grounds exist.

NOW THEREFORE (Name of Firm) OBG Operations, Inc.
hereby consents to an investigation conducted by the New Jersey Attorney General's Office to determine whether any grounds exist to debar or suspend the bidder from contracting pursuant to Executive Order No. 34, 1976, and any applicable regulations adopted pursuant thereto, such investigation to include whether such grounds exist as to any of the bidder's affiliates as the latter term is defined by said Executive Order 34. The undersigned consents to the use and consideration by the New Jersey Attorney General's Office for the above described purposes of any information pertinent to said investigation which may be derived from the investigatory arm of any state or federal governmental agency including, but not limited to, any information pertaining to criminal history.

OBG Operations, Inc.
Name of Firm

Signature

July 24 1987
Date Signed

Richard L. Elander
Type or Print Name

President
Type or Print Title

If the signing party is a corporation, the corporate seal must be affixed and this consent must be accompanied by a duly adopted resolution of the corporation authorizing the party signing to execute this consent.

(Form Revised May 3, 1984)

Compliance with MBE/WBE

O'BRIEN & GERE

COMPLIANCE WITH MBE/WBE, SMALL BUSINESS AND LABOR SURPLUS AREA POLICIES

O'Brien & Gere has a policy of fully supporting MBE/WBE and small business firm participation in Federally and State funded programs to meet the established fair share objectives. Based on the site specific RFP, O'Brien & Gere has identified certain aspects of the Scope of Work which will be subcontracted. In developing the solicitation list for this work, the Office of Small Business Assistance of the New Jersey Department of Economic Development was contacted to obtain a list of potential MBE/WBE and small business firm subcontractors. These firms were then contacted and a request for quotation issued for the Scope of Work to be subcontracted. The firms solicited for the purpose of this proposal are presented below:

Drilling and Geotechnical Analyses

- Empire Soils Investigations
- Moore Trench Environmental Services, Inc.
- W.C. Services, Inc.

(Note: no MBE/WBE or small business firm was identified from this list with drilling capabilities)

Property and Fill Surveying

- Taylor, Wiseman and Taylor
- Andrew Marshall (MBE)

Chemical Analyses

- Carpenter Environmental (MBE)
- Chemical Samples and Analytical Services (MBE)
- US Testing, Inc.
- OBG Laboratories, Inc.

Based on the review of the qualifications and costs submitted from each potential subcontractor, the following firms were selected for this project.

A) Drilling and Geotechnical Analyses - Empire Soils Investigations; due to their overall lowest cost for the field program identified by O'Brien & Gere.

B) Property and Field Survey - Taylor, Wiseman and Taylor (small business); due to their previous familiarity with the site.

C) Chemical Analyses - OBG Laboratories, Inc.; due to their qualifications and experience and overall lowest price for the analytical program identified by O'Brien & Gere.

Time constraints prevented O'Brien & Gere from further pursuing other MBE/WBE and small business firms during the development of this proposal. If selected and requested by the NJDEP, further efforts could be extended to ensure the fair share objectives are met for this project.

Field Sampling

O'BRIEN & GERE

FIELD SAMPLING

The field sampling procedures and protocols previously submitted with proposals for Term Contracts X-464 and X-461 are hereby incorporated into this proposal by reference.

OVERBURDEN DRILLING PROTOCOL FOR SHALLOW WELL COMPLETION

I. Drilling/Sampling Procedures

Test borings shall be completed using the hollow stem auger drilling method or rotary drilling method to a depth specified by the supervising geologist/engineer.

If a hollow stem auger drilling method is to be utilized for 4-inch diameter well completion, the minimum inside diameter of the augers shall be 6 inches.

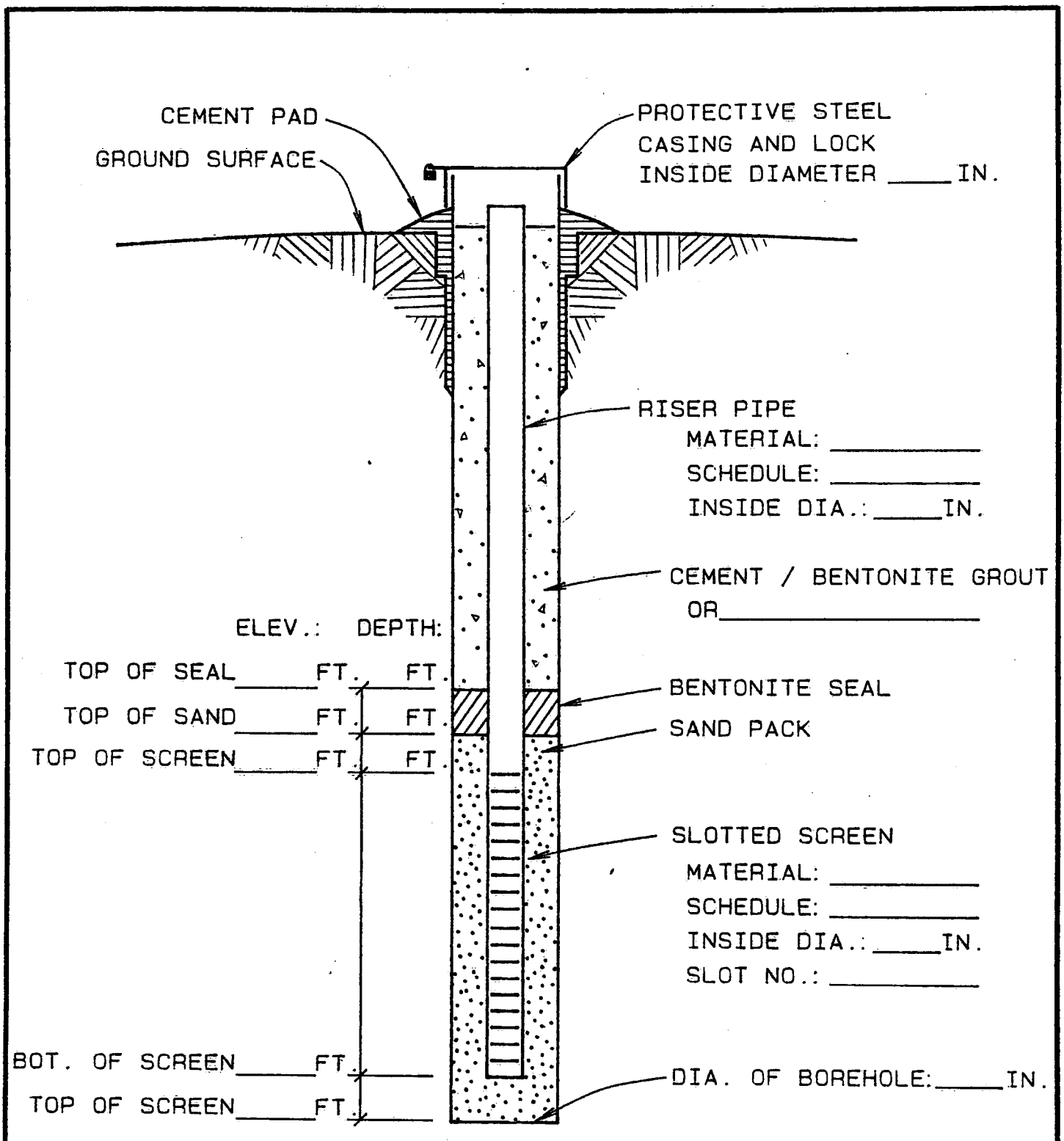
II. Monitoring Well Completion

All wells will be constructed of flush-joint, threaded, schedule 40 PVC well screen and riser casing. The riser casing will extend from the screened interval to 2'-3' above existing grade. Other materials utilized for completion will be washed graded silica sand, bentonite, Portland Cement and a protective steel locking well casing and cap with locks.

The monitoring well installation method for wells installed within unconsolidated sediments shall be to place the screen and riser assembly into the casing once the screen interval has been selected. At that time a washed silica sand pack will be placed around the well screen if required to prevent screen plugging. If a sand pack is not warranted, the auger string will be pulled back to allow the native aquifer material to collapse 2-3' above the top of the screen. A minimum of 2 ft. of Bentonite pellets will then be added to the annulus between the casing and the inside auger to insure proper sealing. Cement/Bentonite grout will be added during the extraction of the augers until the entire aquifer thickness has been sufficiently sealed off from horizontal and/or vertical flow above the screened interval. During placement of sand and bentonite pellets frequent measurements will be made to check the height of the sand pack and thickness of bentonite layers by a weighted drop tape measure.

A vented protective steel casing shall be located over the PVC standpipe extending 2 ft. below grade and 2-3 ft. above grade secured by a Portland Cement seal. The cement seal shall extend laterally at least 1 ft. in all directions from the protective casing and shall slope gently away to drain water away from the well. A vented steel cap will be fitted on the protective casing. The cap shall be constructed so it may be secured with a steel lock.

A typical monitoring well detail is attached. The supervising geologist shall specify the monitoring well design to the Drilling Contractor before installation.



TYPICAL OVERBURDEN MONITORING WELL

N.T.S.

WELL DEVELOPMENT PROTOCOL

All monitoring wells will be developed or cleared of all fine grained materials and sediments that have settled in or around the well during installation to insure the screen is transmitting representative portions of the ground water. The development will be by one of three methods, air surging, pumping or bailing ground water from the well until it yields, relatively sediment free water.

Air surging will consist of a clean polypropylene tubing extended to the screened portion of the well, attached to an air compressor and allowed to surge until the ground water clears. New polypropylene tubing will be used for each well developed by this method.

In pumping or bailing a decontaminated pump or bailer will be used followed procedures outlined in the Decontamination protocol and subsequently decontaminated after each use. Ground water will be pumped from the bottom of the well using a stainless steel submersible pump or equivalent or bailed using a stainless steel bailer. Clean plastic will be placed on the ground to avoid surface contamination and new polypropylene rope on the bailer will be used for each well. Pumping or bailing will cease when the ground water yields sediment free water.

DECONTAMINATION PROTOCOL

All drilling equipment and associated tools including augers, drill bits, drill rods, sampling equipment, wrenches and any other equipment or tools that have come in contact with contaminated materials shall be decontaminated. The decontamination procedure shall be to use a high pressure steam cleaner to remove soils and volatilize organics from the equipment. The water used for this procedure shall come from a controlled source.

The frequency of the decontamination will be determined by the supervising hydrogeologist. At a minimum, the decontamination will be performed prior to the initiation of the drilling program and prior to removing the equipment from the site.

SAMPLING, ANALYTICAL AND QA/QC PLAN

CONTENTS

I. Objectives

A. Data to be of high technical quality and validity and able to withstand technical scrutiny.

B. All involved personnel to understand and follow sound, consistent procedures.

C. Anomalies to be identified, documented and corrected as the field program progresses.

II. Responsibilities

B. E. Smith: Overall Technical Direction of Field Program

Geologists (O'Brien and Gere Geologists and B. E. Smith): Establish which samples taken, how split spoon samples are divided and composited and which analyses will be performed.

J. Herrera: Analyst - Soil GC Analyses

G. Vasquez: Sampling Technician

M. Rosado: Sampling Technician

Luis Rivera Figueroa: Responsible for on-site Analytical Program and QA/QC.

G. M. Alsop, J. C. Henson: Soil GC method development and training.

L. S. Mageissen: Program Schedule and Resources, off-site Analyses.

III. Sampling Methods, QA/QC and Chain of Custody

A. Soil Sampling

1. Sampling Method

a. Take cores by split spoon sampler, as described in Appendix 1. The geologist determines whether the entire split spoon is to be considered a single zone, or divided into two or more zones.

b. Sample zone as follows (see Figure 1):

i. Cut the upper end of the split spoon sample and discard.

ii. Divide the sample in two portions, longitudinally.

iii. Physical ("A") Sample. Place one-half in a jar to be saved for later analysis. Use glass jar with metal lid.

iv. Chemical ("B") Example. Take a second sample from remaining half that is representative of the entire vertical section, and from the interior of the core to avoid contamination from the split spoon. Place in baked glass jar with Teflon lid liner.

2. Sample Labeling

All samples use prefix F

boring no.		depth
F1	2A	2'-4'

Sample number, sequentially with depth
Physical Sample = A
Chemical Sample = B

3. Storage, Transport and Chain of Custody

a. Replace samples in sample jar boxes, keeping physical and chemical samples in separate boxes. Keep sequential samples together.

b. On the top and on one side, label each box, using a magic marker, with the sample numbers it contains (eg. F1 - 1A -0'-2' through F1 -12A -22' -24').

c. Use one "Sample Inventory/Analysis Order" form (Appendix 2) for each box of samples. The geologist will determine which analyses are to be performed. Sample technician signs the form.

d. Transport samples to plant laboratory and store at room temperature. Laboratory analyst must sign each sample Inventory/Analysis Order form. Copies of the form are made and distributed as shown on the form.

4. Equipment Cleaning

a. Split spoon samplers.

1. Submerge sampler in Lestoil/water mixture in cleaning trough. Pure Lestoil may be needed to remove dripolene oil.

2. Scrub sampler inside, outside, ends and threads with brush and cleaning fluid.

3. Rinse in service water in service water trough.

4. Rinse <u>interior</u> of split spoon and split spoon end pieces with distilled water.

5. Rinse <u>interior</u> of split spoon and split spoon end pieces with acetone.

6. Allow to dry.

7. Rinse interior of split spoon and split spoon end pieces with hexane.

8. Allow to dry.

b. Trowells, knives and sample pans.

1. Scrub in Lestoil/water solution. Pure Lestoil may be needed to remove dripolene oil. Clean fingers of gloves also.

2. Thoroughly rinse glove fingers and equipment in service water.

3. Rinse equipment with distilled water.

4. Rinse equipment with acetone.(1)

5. Allow to dry.

6. Rinse equipment with Hexane.(1)

7. Allow to dry.

5. Soil Sampling QA/QC

a. Soil sampling technician inspects cleaned split spoons and other sampling tools.

(1) Knife handles are not solvent rinsed.

b. One rinsate sample will be collected from split spoons, knives and trowells during the first two weeks. The collected sample will be a composite of water, acetone and hexane rinsate. All remaining rinsate samples will be of only the final hexane rinsate. Rinsate analyses will be performed by solvent extraction rather than by direct liquid injection. Analyses will be performed by O'Brien & Gere Laboratory.

c. The above samplings will be done at times determined randomly by Luis Rivera Figueroa. Samples to be taken by the sampling technician.

B. Ground Water Sampling

1. Sample Collection

a. Measure and record data as contained in "Ground Water Sampling Sheet".

b. Insure that any equipment which will enter the well has been decontaminated with distilled water, acetone, hexane and distilled water rinse in this order. Contain all rinsate for proper disposal. Items to be decontaminated include: water level probe tip and wire, and bailer. Use disposable wire to measure total depth of each well.

c. Evacuate required number of well volumes using a self priming centrifugal pump by attaching intake hose directly onto the well.

d. Discharge the water into a vacuum truck for later disposal or directly into a process sewer water pump which feeds to the waste water treatment plant. Discharged water will be periodically monitored with a calibrated drum and watch to determine the discharge rate.

e. Remove the intake hose from the well casing and slowly lower the teflon bailer into the well. Take the sample from the uppermost part of the water

column. The depth will vary depending on the well location and rate of water level recovery in each well.

f. Remove the bailer and discharge the water into a glass container. From this container pour the water into the previously prepared (with proper preservatives) and labeled sample containers. Collect as many bailers as required to completely fill the sample bottles. Decontaminate container after use at well. Perform same procedure for one duplicate and one blank.

g. Label samples with well number, date and collector's name(s). Send the sample bottles immediately to the laboratory for preservation in a freezer at 4°C.

h. Conduct field analyses on remaining bailer sample for pH, temperature, conductivity, and salinity.

i. Decontaminate equipment as discussed in Item b.

j. Use caution to prevent making contact on the ground with any equipment that will enter the well, such as, bailer and wire, and water level probe.

k. Record any unusual events, such as, slow recharge rates, malfunction of equipment, possible contamination, on the "Ground Water Sampling Sheet" under the heading "Notes".

l. Ship samples in iced coolers and by appropriate means to insure arrival at the laboratory within a four day period. Include completed chain of custody form with each sample shipment.

C. Sample Preservation and Shipment

1. Ground water samples shipped off site are to be preserved using the methods specified in SW-846, "Text Methods for Evaluating Solid Wastes, Physical Chemical Methods." Under no circumstances shall the holding time before analysis be longer than that recommended in the appropriate SW-846 method. Samples to be shipped off-site for analysis are to be packed in wet ice or "blue" ice shipped at 4°C as a minimum. Samples requiring chemical preservatives are to be so preserved.

2. Any shipment of samples to the mainland shall be by express air Freight, with overnight delivery required whenever possible.

D. Chain of Custody

1. Use one chain of custody from (Appendix 3) for each sample or for a collection of samples split for different analyses) from one well. A copy of the chain of custody form is to be retained in the file in the plant laboratory.

2. The offsite, contract laboratory must return a copy of the chain of custody document to UCCI after the sample has been analyzed and discarded.

IV. ANALYTICAL METHODS

A. Soil GC (onsite)

1. Method

A gas phase extraction followed by GC/FID has been developed for this program. The procedure is detailed in Appendix 7.

2. QA/QC

a. Blanks. Run one blank per day using standard clean soil. Run field blanks and lab blanks on alternate days.

b. Standard. Run one standard per day. Standard is prepared by adding a stock solution to clean soil. The daily results of each standard are plotted against the control limits (see Appendix 4).

c. The GC column shall be baked overnight before each day's analytical work.

3. Reporting

Use the daily analyst's report form to report all analyses for each day, including blanks and duplicates (Appendix 5).

B. Soil GC/MS (Contract Laboratory)

1. Method

Methylene Chloride extraction per "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods," EPA office of solid waste, SW-846. Analyze base neutral and acid extractable fractions only.

One field blank and one duplicate shall be included in the soil samples sent to contractor laboratory.

Blank and duplicate samples shall be labeled in such a way as to <u>not</u> reveal to contract laboratory personnel that they are blank or duplicate samples.

C. Ground Water Analyses (Contract Laboratory)

1. Method

All analyses shall be carried out according to the appropriate procedures from the following publications:

a. "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March, 1979.

b. "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods," EPA Office of Solid Waste, SW-846.

V. NONCONFORMANCE

A. The following events are considered QA/QC anomalies:

1. Rinsate/wash samples with significant organics concentration.

2. Blank soil GC showing significant concentration of dripolene indicator compounds.

3. Two consecutive standard soil GC analysis which have two or more compounds outside the control limits.

4. Significant drift in GC standards or instrument calibrations.

5. Any other anomalies which, in the opinion of technical personnel (including technicians and analysts), cast significant doubt on the validity of the data.

B. Reporting

1. The person discovering the anomaly (such as the responsible analyst) fills out, signs and dates the top half of the QA/QC Anomaly Report form, (see Appendix 6).

2. The initiator makes three copies which are distributed as follows:

   a. Original to Luis Rivera Figueroa.

   b. Copy to QA/QC file at the plant laboratory.

   c. Copy to B. E. Smith

   d. Copy retained by initiator. Separate oral reporting to LRF or BES is encourage.

C. RESPONSE

1. Luis Rivera Figueroa shall take corrective action for each anomaly which, in his judgement is technically appropriate. He may consult other team members, plant resources and technical center resources at his discretion.

2. Corrective actions and a description of the effect of the anomaly on data are documented on the original form, signed and dated. Three copies are made and distributed to:

   a. Original to QA/QC file at the plant laboratory.

   b. Copy to B. E. Smith.

   c. Copy to originator.

   d. Copy retained by Luis Rivera Figueroa.

VI. AUDITS

A. Approximately half way through the filed program, a QA/QC audit shall be performed by LRF, BES and a chemist independent of the project.

B. The auditors shall review sampling and analytical practices and documentation to insure that they are in conformance with this procedure and are technically sound.

C. The team shall issue a report, including recommendations and corrective actions taken.

VII. FILES, DOCUMENTATION, SAMPLE RETENTION

A. The following information/records shall be kept at the plant in file cabinet in GL laboratory for three years (Luis Rivera responsibility):

1. Copy of Chain of Custody Documents for all samples shipped offsite.
2. Analyst's notebook.
3. Gas chromatograms and associated integrator printouts and calculations.
4. Summary report sheets.
5. QA/QC Anomaly Reports.
6. QA/QC Audit Reports.
7. Soil GC control charts (Appendix 4).

B. The following information shall be kept at the plant in the plant laboratory file during the field investigation program and sent to South Charleston (Attention B. E. Smith) at the conclusion of the field program:

1. Copy of summary report sheets.
2. Copy of QA/QC Anomaly Reports.
3. Copy of QA/QC Audit Report.

4. Sample inventory showing which samples were shipped offsite and which samples are retained onsite.

5. Soil GC standard control charts (per Appendix 4).

C. Sample Retention

1. All soil samples shall be retained at the plant laboratory for three years, after which they will be discarded except for reference samples.

2. All soil samples shipped to the South Charleston Technical Center shall be discarded October, 1986, except for reference samples.

3. B. E. Smith shall designate reference samples by October, 1986. Reference samples shall be kept at the plant and at the Technical Center indefinitely.

4. Samples sent to contract labs shall be returned to UCCI after analysis.

Health and Safety Plan

OBRIEN & GERE

GENERIC SAFETY PLAN

The following is the form to be used for the development of a project-specific safety plan for (name of client/project) . This is to be used for contracted/subcontracted work, in which the "sponsor" (client) requires a project safety plan for on- site activities. By following the directives and examples corresponding to each question, the form can be filled out in such a way that it will serve as a complete, comprehensive and effective safety plan for all activities involved with the specific project.

The basic areas of information on the form are:

- Project Information
- General Site Information
- Work Site Hazards
- Safety Protocols and Procedures
- Emergency Measures

Where applicable, portions of a previously established safety manual, describing general site safety protocols and practices, should be referenced, rather than repeated, within the Project Safety Plan.

I. PROJECT INFORMATION

A. Project Title _____

B. Organization

1. Primary "Sponsor" Representative (Project Supervisor):

Full Name _____ Location _____

Department _____ Phone # _____

2. "Sponsor" Safety Expert/Industrial Hygienist:

Full Name _____ Location _____

Department _____ Phone # _____

3. Project Manager/Coordinator (the contractor/subcontractor):

Full Name _____ Phone # _____

Address _____

_____

4. Project Safety Officer:

Full Name _____ Phone # _____

Address _____

_____

5. Other Authorized Project Personnel:

Name	Position	Company

The Project Manager is responsible for obtaining permission for for all subcontracted work activities involved with the project. Notification of specific requirements shall be the responsibility of the Project Supervisor.

The Project Safety Officer is responsible for advising his/her staff of the guidelines of this safety plan, as well as any safety protocols held by the "sponsor".

C. Description of Project

This should include the purpose and intent of the project, the type and extent of work required, notes of previous similar work and any noteworthy aspects or operations involved in the project. Attachments may be added to this form as necessary.

D. Identify Needs:

Equipment	Utilities	Materials

E. Time Schedule:

Phase	Start Date	Finish Date

F. Area Security:
Security is generally the responsibility of both the site owners (the sponsor) and the contractor/subcontractor. On-site security measures should be discussed during the initial safety training session. Specific protocols for various aspects of site security should be clearly explained by the Project Supervisor, adhered to by all project personnel, and enforced by sponsor personnel.

G. Communication:
The chain of comunication will be assumed to proceed from project personnel to Project Safety Officer and Project Manager, to Sponsor Project Supervisor. Any particular provisions for deviations from this usual route should be noted below:

Any external communication is the sole responsibility of sponsor's public relations personnel.

II. GENERAL SITE INFORMATION

A. Work Site/Area Location _____

B. Access Point (sponsor rules)_____

C. Topography _____

D. Ground Cover _____

E. Features
(special conditions, buildings, obstacles, utilities, etc.):

_____

_____

F. Brief History
(incl. regulatory actions, previous use, previous similar work)

_____

_____

_____

G. Site Map
(attach map(s) showing location of site and pertinent surrounding features, as well as the location and layout of all temporary facilities to be constructed on or near the site).

III. WORK SITE HAZARDS

A. Hazardous Materials Present:

Compound	Concentration/Amount and media present in	Degree of Hazard

Note: all Material Safety Data Sheets corresponding to identified compounds listed above must be attached to this Plan.

B. Physical Hazards Present (including heavy equipment, electrical or biological hazards, oxygen deficiency, fire & explosion, radiation, excess temperature or noise):

C. Summary of Site Hazards

1. Check all of the following that are appropriate for chemical hazards:

____ Corrosive	____ Radioactive	____ Toxic
____ Ignitable	____ Volatile	____ Reactive

2. Evaluation of Expected Hazard

This section is to include a summary statement - what, if any, are the hazards, how significant are they, via what routes (oral, inhalation, direct contact) are they presented, what is(are) the major health threat(s), the specific areas of danger, and any other pertinent information.

IV. SAFETY PROTOCOLS AND PROCEDURES

A. Any specific, sponsor mandated safety protocols should be referenced below:

B. Level of Protection Required to Address Hazards Present:

____ A ____ B ____ C ____ D

(Refer to Attachment A for further description and selection criteria)

NOTE: This can be task-specific, and not universal for the overall project, depending on the conditions involved for each task.

C. Modification or Specialized Equipment:
(include types of cartridges and/or filters for air-purifying respirators; include type of material for gloves, boots, suits)

D. Monitoring Equipment

1. List conditions requiring monitoring (airborne dust, vapors, heat stress, radiation, etc.)

If a particular compound of concern is to be monitored, note the compound(s) next to the condition above. Note the PEL of all identified site contaminants.

2. Details on Monitoring Equipment

(a) List below the name of each piece of monitoring equipment to be employed:

1. _____

2. _____

3. _____

4. _____

(b) For each item listed above, put the corresponding number (1 - 4) in all appropriate blanks below.

____ Fixed ____ Continuous ____ Instant Reading

____ Portable ____ Periodic ____ Analytical Results

(c) The details noted above provide the information to determine the personnel needed to maintain a proper monitoring program. Special consideration must be given to:

- the need to train personnel in the use of the equipment
- materials needed to properly utilize the equipment
- set-up of a monitoring station
- scheduling of the monitoring program
- scheduling of laboratory work for any necessary analyses

Note all provisions for the considerations just listed:

_____

_____

_____

_____

_____

(Again, attachments may be made to this form as necessary.)

E. Training, Use and Care of Personal Protective Equipment

All training of personnel on the proper use and care of the personal protective equipment to be employed is the responsibility of the Project Safety Officer, possibly with assistance from the Sponsor Safety Expert. No one is to attempt to wear and/or use the equipment without proper training.

Provision of all the proper safety equipment is the responsibility of the Project Manager and the Project Safety Officer. The Sponsor Safety Expert should be consulted if there is any question as to the appropriate equipment to provide.

All personnel will be trained in accordance with current OSHA regulations for hazardous waste operations, as cited in 29 CFR 1910.120.

F. Decontamination

The extent of decontamination is dependent on the level of personal protection involved, as well as the nature of the materials involved. Decontamination of workers and personal protective equipment employing Level B protection generally progresses through the following steps:

1. Tools, sampling devices, containers, monitoring instruments, radios, clipboards, and all other items of equipment used in the work zone are deposited on a drop cloth of plastic.

2. Outer boots and outer gloves are scrubbed with detergent water and rinsed with abundant water.

3. The tape which sealed the boots and gloves to the outer protective suit is removed. These boots and gloves are removed, and they along with the sealing tape are placed in separate containers lined with plastic.

4. If a worker is leaving the work zone just to change a cartridge or the entire respirator, this is the point at which the worker does so. Following the exchange, new outer gloves and boot covers are donned; the joints are taped; and, the worker returns to duty.

5. The protective suit is removed and deposited in plastic-lined disposal container.

6. Respirators are removed and cleaned with detergent water by personnel assisting with the decontamination process.

7. Inner gloves are removed and deposited in plastic-lined disposal containers.

8. The worker showers and changes clothes to complete the decontamination process.

9. Tools and equipment, including heavy machinery used on the site, are decontaminated by decontamination line personnel wearing the proper personal protective equipment and clothing. Gross accumulations of contaminated soil are swept or scraped off. All surfaces which have contacted the contaminated wastes are steam-cleaned or washed with detergents and rinsed.

Decontamination procedures for lower levels of protection would necessarily be less involved.

Note any project-specific details and provisions on decontamination procedures for the following:

1. Personnel _____

---

2. Personal Protective Equipment _____

---

3. Sampling Equipment_____

---

4. Support Equipment_____

---

5. Materials Needed for All Decontamination Procedures_____

All wastes or waste streams generated by decontamination activities must be collected and disposed of as hazardous wastes. Sponsor personnel should be consulted for specific, onsite requirements for disposal of contaminated materials.

G. Site Areas and Facilities

1. Describe the delineation and location of the work zone, decontamination zone and the clean zone.

---

2. Describe the location and available services of all support facilities located at or near the site. Refer to the Site Map.

H. Medical Surveillance Program

(describe the medical surveillance program to be employed for all onsite workers. Include specific health monitoring criteria).

V. EMERGENCY MEASURES

A. Emergency Phone Numbers

Site Medical Department (if one exists) _____
Ambulance_____
Police_____
Fire Department_____
Hospital_____
Poison Control Center_____
EPA_____
State Environmental Agency_____
Coast Guard_____
Utilities_____

B. Location/Directions to:

Nearest Phone_____
Other Emergency Communications_____
_____
Site Medical_____
_____
Hospital_____
_____

Note! - All Material Safety Data Sheets MUST be attached to this safety plan, and a copy of this must remain onsite at all times.

C. Response to Incidents as listed below should follow the basic steps explained with each:

1. Major Release of Hazardous Material - the general order of response should be:
   Containment - using absorbent booms, blankets, or granular materials.
   Clean-up - of hazardous material and all contaminated articles (including soils) using additional absorbent materials.
   Disposal - of all polluted materials as hazardous waste.
   Investigation - into the cause, and future prevention.
   An investigation is to be conducted for all injuries/ illnesses/serious incidents.

2. Major Exposure
   Notify Project Safety Officer, Project Manager, Project Supervisor, Site Medical Department, and the site rescue team, if such exists.
   Remove victim from area only if necessary, using a stretcher
   Administer preliminary first aid, if trained in such
   Victim will be transported to treatment at the direction

of the Project Safety Officer and the Sponsor Safety Expert
Investigation

3. Medical Crisis
   Follow procedures in 2. above

4. Fire and/or Explosion
   Evacuate area
   Contact Fire Department
   Follow procedures in 2. above

5. Accident Involving Equipment
   Follow procedures in 2. above

6. Flood
   Disconnect all equipment and utilities, if possible
   Evacuate personnel (and equipment, if time permits)

D. Onsite Facilities Available

The site medical department is to be utilized at the direction of Sponsor personnel. Site rescue teams may be available to respond to emergency needs. Also, the location of safety showers, eyewash facilities, stretchers and rescue blankets should be noted, and all project personnel made aware of the locations.

E. Procedures for Contacting Offsite Facilities

All incidents requiring the response of offsite facilities must be reported to the Project Safety Officer, and Project Supervisor. It will be the responsibility of the Project Supervisor to contact the appropriate outside resonse agency.

F. Follow-Up

1. Documentation
   Documentation is important in understanding an incident and planning to prevent any similar incidents in the future. A report must be filed with the Project Supervisor for all incidents of worker illness or injury.

2. Restore to Order
   Work shall not be continued until all equipment has been restored to readiness, in order to be fully prepared for any future incidents.

ATTACHMENT A

Selection of personal protective equipment involves definition of the level of protection required. The following guidelines should be used in making this determination:

Level A Provides the highest level of respiratory, skin and eye protection. This level should be employed when a chemical is either suspect or identified which requires the skin and eye protection, while measured and/or expected levels of airborne contaminants merit the respiratory protection. This should also be used in confined, poorly ventilated areas, until conditions merit a downgrade to a less stringent level.

Level B Provides the highest level of respiratory protection, but lesser levels of skin and eye protection. This is the minimum level recommended during initial visits to the site and then until the nature of the hazards has been determined to demand less protection. Specific respiratory requirements include conditions with IDLH (Immediate Danger to Life and Health) concentrations of substances that do not present a severe skin hazard, contaminants which exclude the use of air-purifying respirators, atmospheres containing less than 19.5% oxygen, or situations of unidentified or unquantified airborne contaminants.

Level C Criteria for using air-purifying respirators is met but skin and eye exposure is unlikely. Hazardous airborne substances are identified and quantified.

Level D No respiratory protection. Minimal skin protection - only that typical of any construction site. For situations which contain no known hazards.

The following checklist, taken from the NIOSH/OSHA/USCG/EPA "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities", designates the personal protective equipment, both recommended and optional, for each of the levels discussed above.

	LEVEL A	B	C	D
Positive-pressure (pressure demand), self-contained, breathing apparatus (SCBA)* or pressure-demand supplied-air respirator with escape SCBA*	▪	▪		
Full-face, air-purifying respirator*			▪	
Fully-encapsulating, chemical-resistant suit	▪			
Chemical-resistant clothing		▪	▪	
Chemical-resistant inner gloves	▪	▪	▪	
Chemical-resistant outer gloves	O	▪	▪	O
Chemical resistant overboots	▪	▪	▪	
Boots or shoes with steel toe and shank	▪	▪	▪	▪
Thermal Luminescent Detector badge (radiation)	O	O	O	
Personal radiation detector	O	O	O	
Hard hat	O	▪	▪	▪
Coveralls	O	O	O	▪
2-way radio communications (intrinsically safe)	▪	▪	▪	
Escape mask			O	
Safety eyewear				▪

*=OSHA/NIOSH approved.
▪=Recommended
O=Optional

QA/QC

O'BRIEN & GERE

cc: HAP[illegible]
SWK
JLT
AE
BA Browne

USEPA REGION II ENVIRONMENTAL SERVICES DIVISION

MONITORING MANAGEMENT BRANCH

CERCLA QAPjP REVIEW GUIDANCE

APRIL 1987

Revision 0

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APR 27 1987

REGION II CERCLA QAPjP REVIEW GUIDANCE

I. Format - Required Documentation

A. Combined Work/QA Project Plan Short Form
B. Project/Site/Field Operations Plan, Quality Assurance Project Plan, or Field Sampling Plan, all of which shall be abbreviated POP.
C. The Administrative Order or Work Plan, if the reviewer finds it informative.

II. Content

A. Combined Work/QA Project Plan Short Form

1. The short form must be completed, but most of the time the various sections are simply referenced to the POP. This is acceptable if all sections are discussed in the POP. However, the most important part of the Short Form is the parameter table, and it must always be filled out in full. See section II.B.6. for the necessary content.

B. POP

1. Project Objectives - The objectives should indicate the anticipated duration of the monitoring, the need to determine of extent and degree of contamination, and the intended use of data, be it a qualitative or a quantitative assessment of contamination.

2. Site Background - A detailed description of the site geology, the history of the site and the suspected contamination. Maps of the area should be included.

3. A detailed sampling plan should be included along with a map of the sampling design, and sampling SOPs (either by reference or attachment).

4. An organizational chart depicting the chain of command and the personnel to be on site in the contractor's organization, with appropriate titles and telephone numbers.

5. A discussion of chain-of-custody practices.

6. A table of analytical methods, preservatives, holding times, and sample container requirements; and identification of the laboratory performing the analyses. If the laboratory to be used does not participate in CLP, its QA program manual must be supplied. (See Section III.C.4).

7. Data validation protocols.

8. Corrective action measures.

9. Scheduling of performance and/or systems audits.

Specific requirements for items 3-9 follow.

III. Requirements

A. Sampling Design

1. When designing soil sampling plans, the approach is usually either a biased or random design. A good discussion of sampling design can be found in SW-846, Third Edition, Volume 2, Chapter 9. In SW-846, it is stated that sampling accuracy is usually achieved by some form of random sampling, where every location over the area has a theoretically equal chance of being sampled and measured, i.e., the sample is representative of the population. One of the most common methods of selecting a random sample is to divide a population by an imaginary grid, assign a series of consecutive numbers to units of the grid, and select the numbers (units) to be sampled through the use of a random numbers table (such a table can be found in any text on basic statistics). It is important to emphasize that a haphazardly selected sample is not a suitable substitute for a randomly selected sample. That is because there is no assurance that a person performing undisciplined sampling will not consciously or subconsciously favor the selection of certain units of the population, thus causing the sample to be unrepresentative of the population. In the POP, the random sampling design should be discussed in detail and it should be clear that a haphazardly selected sampling design is not used.

In a biased soil sampling design, samples are taken in predetermined locations in areas where contamination is expected to be found. Usually in this case a site is known to be contaminated in certain spots rather than being contaminated over a large area. During a site investigation when it is desireable to establish that there exists contamination on site, this approach is appropriate. During a remedial investigation when the most common goal is to determine the extent of contamination over the site, this approach does not accomplish the goal. When determining extent of contamination, it is more appropriate to use a random sampling plan; thus, when this approach is proposed for a remedial investigation, a justification should be provided which explains how the goal will be achieved using a biased sampling design.

2. In a ground water sampling plan, each ground water well is a component of a network approach wherein information on the ground water system is developed as a basis for extrapolating information to areas where samples were not collected and/or for predicting the effects of natural and man-made stresses on the subsurface systems. A number of references are available which discuss this concept, however, at this time no requirements can be given for a ground water sampling design.

3. A discussion of site location for sampling surface waters, aquatic organisms and bottom sediments can be found in "Handbook for Sampling and Sample Preservation of Water and Wastewater", September 1982, EPA 600/4-82-029.

B. Sampling Procedures

1. Decontamination

The acceptable decontamination procedure for all sampling equipment is:

a. wash and scrub with detergent (low phosphate if P^- is an analyte);
b. tap water rinse;
c. rinse with 10% HNO3;
d. tap water rinse;
e. a methanol followed by hexane rinse, or an acetone rinse;
f. deionized water rinse (demonstrated analyte free);
g. air dry; and,
h. wrap in aluminum foil, shiny side out, for transport.

If metals are not being taken, steps "c" and "d" can be omitted and if organics are not being sampled, step "e" can be omitted. Solvents must be specified as pesticide grade or better. Preferrably, all decon should be done in a laboratory situation prior to going into the field and equipment should be dedicated to each sampling point. If this is not possible, equipment must be cleaned once a day offsite, and dedicated each day. When sampling, cleaned equipment can be rested on polyethylene sheeting, but cannot be wrapped in it for any reason. Samplers must use and change disposable gloves between wells or sampling points. The demonstrated analyte free water must be stored away from the solvents on-site.

All drilling equipment and well casings must be steam cleaned before use and the drilling equipment must be steam cleaned between boreholes. All types of heavy sampling equipment such as dredges should be cleaned with soap and deionized water or steamcleaned before and between sampling locations.

2. Ground Water Sampling

In devising ground water sampling protocols, the techniques of sample collection, preservation, and handling must be held constant to ensure the integrity of that sample. The act of sampling causes various changes in ground water which may affect its physical/chemical characteristics. For example, ground water is usually well insulated and, therefore, normally experiences a narrow range of temperatures. During sample collection it may undergo temperature changes of 15 to 25 degrees C and rapid pressure changes. Degassing, aeration, pressure, and temperature variations can cause significant changes in the recovery of volatile organic compounds, alter the chemical speciation of dissolved chemical compounds, and affect the carbonate system thereby shifting pH or redox potentials and affecting the chemistry of various constituents including iron, manganese, sulfur, and oxygen.

In addition to potentially altering water chemistry and subsurface microbiology, sampling may result in the adsorption from and/or leaching of constituents into the ground water through contact with materials in the sample delivery system.

a. Well Drilling Techniques - The acceptable types of ground water well drilling techniques are presented in Attachment I. The method of mud rotary is the most widely used technique in this Region because of the geologic formations. Attachment I is a paper prepared by Kenneth Jennings in EPA-HQ describing some of the drawbacks associated with drilling fluids. If it is desireable to use mud rotary, then a justification must be provided explaining why the use of this technique is more advantageous than the use of any other.

b. Well Casing and Screen Materials - Well construction materials must be durable enough to resist degradation thereby retaining their long-term stability and structural integrity and be relatively inert to minimize alteration of ground water and collected samples. Acceptable construction materials must be used in well casings, well screens, filter packs and annular seals.

Materials selected must be compatible with probable mixtures of ground water and chemical substances likely encountered at the site. Compatibility must be judged from both a structural and a chemical viewpoint. The main criterion for chemical compatibility should be that the short and long term interaction of the casing or sampling equipment materials with the ground water will not cause analytical bias. In general, due to surface area considerations, the materials used in the sampling equipment may be expected to have a greater impact on sample integrity than would the well casing material; however, in an effort to minimize all sources of error, an attempt must be made to minimize those sources which can be identified.

In general, the more inert (i.e. less reactive) the casing material, the more assured one is that the ground water sample withdrawn from the well is representative of the actual ground water. The major potential alterations of the sample resulting from interactions with the well casing/screen materials are: 1) adsorption reactions -both of organics and inorganics; and, 2) desorption reactions -leaching of chemical constituents from the well casing material into the ground water or desorption of newly adsorbed material.

Attachment III is the Region II Standard Operating Procedure for Selecting Ground Water Well Construction Material. The decision tree contained within it must be used on each case to determine the proper well casing to be used. If there field data is not available which can be used in this decision tree then the material of choice is stainless steel 316 or Teflon. If different ferrous materials are used above and below the saturated zone an insulator must be coupled between the two materials to prevent galvanic reactions.

Wells which already exist on any site may be sampled, however the project officer should be informed of the ramifications of considering data from those wells if, according to the SOP for Selecting Ground Water Well Construction Material, the existing well casing is not compatible with the type of ground water contamination or the sensitivity of analysis needed.

Filter packs, usually consisting of well rounded, chemically inert clean quartz sand, silica, or glass beads, are generally required for monitoring

wells installed into unconsolidated formations. However, in medium to coarse sand or larger materials and in bedrock, a pack is normally not required. The functions of a filter pack are to: 1) stabilize the formation and minimize pumping of fines; 2) permit use of the largest possible screens lot size; and 3) increase the effective diameter.

c. Annular Space Seals - Annular sealants are placed between aquifers or water bearing zones, and above screened sections of monitoring wells, to isolate those zones or sections of an aquifer from which ground water samples are to be withdrawn. The annular space seal must be adequate to prohibit the entry of surface water down along the entire length of the well casing to ensure that water from overlying formations does not migrate downward. Likewise, water from aquifers of greater head must not be allowed to enter/contaminate aquifers having lesser head. The potential for cross-contamination of aquifers resulting from ill-advised construction and installation of monitoring wells is a real concern.

Effective seals are obtained by using expanding materials that will not shrink away from the borehole and well casing after setting. Expanding neat cement and bentonite or a mixture of neat cement and bentonite are among the most effective materials for this purpose.

The seal must also not compromise the chemical results of samples obtained from the well. Bentonite has considerable ion exchange capacity which may interfere with the chemistry of collected samples when in close proximity to the screen or well intake. Similarly, neat cement which does not harden properly will affect the pH of water from monitoring wells when in close proximity to the well screen or intake.

The annular space which must be sealed to prevent contaminant migration extends from the bottom of borehole to the bottom of the well screen and from the top of the filter pack (or 2 feet above the well screen) to the ground surface.

To minimize the possibility of contaminating ground water samples, untreated bentonite pellets or an untreated bentonite/water slurry should be used as sealants in the saturated zone.

Tremie pipe must be used to place the sealant material down the borehole.

d. Well Development - Proper well development is essential to the collection of representative ground water samples. Development increases well efficiency, removes fine materials which would otherwise interfere with chemical analyses, and results in the removal of unwanted excess bentonite which is down the borehole.

To develop a well effectively, reversals or surges in flow to avoid bridging of particles are usually required. These reversals or surges can be created by using surge blocks, air lifts, bailers or pumps. Wells must be developed so that ground water samples are particulate free.

At this time, there is no minimum waiting period requirement from the time of

well development to the time of well sampling.

e. Well Evacuation - The water found in a well prior to sampling will likely not be representative of in-situ ground water quality. Therefore, standing water in the well must be removed so that water sampled is representative of the formation water.

The evacuation procedure should ensure that all stagnant water in the well casing is replaced by new formation water upon completion of the process. Either pumps or bailers may be used. The intake for a pump used to evacuate should be placed above the top of the well screen. The pump and tubing or bailer and cord used should be cleaned with soapy water and deionized water prior to use. The pump tubing in contact with water must be a flexible polyethyene or Teflon, and must be dedicated to individual wells.

All down-hole equipment must be made of Teflon or stainless steel. Bailer cords must be made of Teflon coated wire, stainless steel wire, or polypropylene monofilament. The use of ten foot leaders of any of these three materials is acceptable with any other material above that. Equipment having neoprene fittings, PVC, Tygon tubing, silicon rubber bladders, neoprene impellers, viton or carbon steel are not acceptable.

For low yielding wells, the wells must be evacuated to dryness once. As soon as the water level recovers, the first samples removed must be ones taken for pH, conductivity, temperature, VOAs and TOX if those analyses are called for in the sampling plan.

For higher yielding wells, evacuation of a minimum of three (3) well volumes is required prior to sample collection. As for low yielding wells, parameters that are pH sensitive or subject to loss through volatilization as listed above are to be collected first. Sampling must take place within 3 hours of purging the well.

f. Sampling Equipment - Certain types of sampling equipment may alter ground water samples through degassing, volatilization, or temperature effects. The only acceptable sampling devices for pH sensitive and volatile parameters are:

1. Teflon/stainless steel bladder pumps having adjustable flow control;
2. Teflon or stainless steel bottom-filling bailers; and,
3. Teflon or stainless steel syringe bailers.

Appropriate operating precautions for these sampling devices include:

1. bladder pumps must be operated in a continuous manner so that they do not produce pulsating samples that are aerated in the return tube or upon discharge. When collecting samples for volatile analysis using a bladder pump, pumping rates should not exceed 100 mls/minute;

2. check valves must be designed and inspected to ensure that fouling problems do not reduce delivery capabilities or result in aeration of

the sample;

3. sampling equipment (especially bailers) must never be dropped into the well as this will cause degassing of the water upon impact, and the equipment should not be rinsed with ground water before a sample is taken;

4. the bailer's contents must be transferred to a sample container in a way that will minimize agitation and aeration without transferring the sample to an intermediate container, or utilizing a mechanical device;

5. clean sampling equipment must not be placed directly on the ground or other contaminated surface. When not in use, these devices should be placed on plastic sheeting or aluminum foil.

Other sampling devices, including peristaltic pumps, gas lift devices, centrifugal pumps, and venturi pumps, may be used for collection of non-volatile or non-pH sensitive parameters, provided that the pumps are constructed of stainless steel or Teflon in order to minimize any effects upon sample quality. This requirement applies to all down-hole equipment. Equipment having neoprene fittings, PVC, Tygon tubing, silicon rubber bladders, neoprene impellers, and viton are not acceptable. Equipment must be made of fluorocarbon polymers (i.e. Teflon) or stainless steel.

Bailer cord must be made of Teflon coated wire, single strand stainless steel wire or polypropylene monofilament. The use of nylon or hemp is prohibited. A 10 foot leader of one of the three acceptable materials may be used with a material of choice above that. The cord and/or leader that comes in contact with well water should be cleaned with soapy water and rinsed with deionized water before use, and that cord and/or leader must be dedicated to each well. Throughout the duration of the project the method of sample collection should be consistent, i.e. all ground water wells should be sampled with the same type of device during every sampling event.

When filling sample containers for VOA and TOX analyses care must be taken to see that the containers are free of air bubbles.

g. Microbiological Sampling - (Taken from "Handbook for Sampling and Sample Preservation of Water and Wastewater", EPA 600/4-82-029, Sept. 1982.) There are several different methods for obtaining a ground water sample for microbiological parameters. Each of these methods differ in their advantages and disadvantages.

The majority of ground water samples are obtained using pre-existing wells which have existing in-place pumps. This limits the precautions the sampler can take to ensure a non-contaminated sample. Samples should be obtained from outlets as close as possible to the pump and should not be collected from leaky or faulty spigots or spigots that contain screens or aeration devices.

The pump should be flushed for 5 to 10 minutes before the sample is collected. A steady flowing water stream at moderate pressure is desirable in order to prevent splashing and dislodging particles in the faucet or water line.

after pumping to pull the pump and take the sample with sterile bailer.

In those cases where the water level in the well is less than 20 to 30 feet below the surface, a surface vacuum pumping system can be used for flushing out the well and withdrawing a sample. An ideal apparatus for this is depicted in Figure 9.14. This apparatus consists of two lengths of tubing which are sterilizable by autoclaving and portable vacuum system. The two tubing lengths which are attached side-by-side to each other, are sterilized in the laboratory in large covered containers. In the field they are lowered into a well using sterile gloves, attached to a vacuum flask on the inlet side of the pump. Large volume sampling for viruses or pathogenic bacteria can be accomplished by substituting filters or columns with various adsorbents in place of the vacuum flask.

Standing water is prevented from entering the sampling tubing upon insertion into the well by making the sampling tube a few feet shorter than the flushing tubing and turning on the pump to the flushing system as the tubing is put into the well.

To sample wells using this type of system requires a relatively large autoclave, several sets of sampling tubing, and a relatively shallow ground water.

Springs are unlikely to yield representative samples of an aquifer due to surface contamination close to a spring's discharge unless the spring has an extremely fast flow and the outlet is protected from surface contamination.

Lastly, interpretation of analytic results may be difficult in some cases since surface contamination of wells due to poor drilling and completion practices is common. In cases where drinking water supplies are involved, a thorough inspection of the well is required to eliminate surface contamination down the well as a source of contaminants. Disinfection of the well by approved methods and resampling may be advisable, if disinfection will not affect the well for other sampling purposes.

h. Preservation - Samples must be preserved or iced immediately in the field. See Section III.C.2. for appropriate preservatives. Samples receiving pH adjustment must be checked with pH paper to ensure the proper pH has been achieved.

i. Filtration of Metals Samples - Attachment IV presents the Region II policy on filtration of metals samples. Note the requirement that total metals must be run on ground water samples, i.e., samples must be taken unfiltered, with an option to take a duplicate sample and filter it for dissolved metals analysis. Filtration is accomplished by passing an unpreserved sample once through a 0.45 u membrane (cellulose ester) filter in an apparatus that has been precleaned with a 10% HNO3 solution and deionized water. The apparatus should be cleaned between samples in the same manner. Samples must then be preserved immediately and the pH checked with pH paper. Samples for any other analyses must not be filtered.

3. Surface Water Sampling

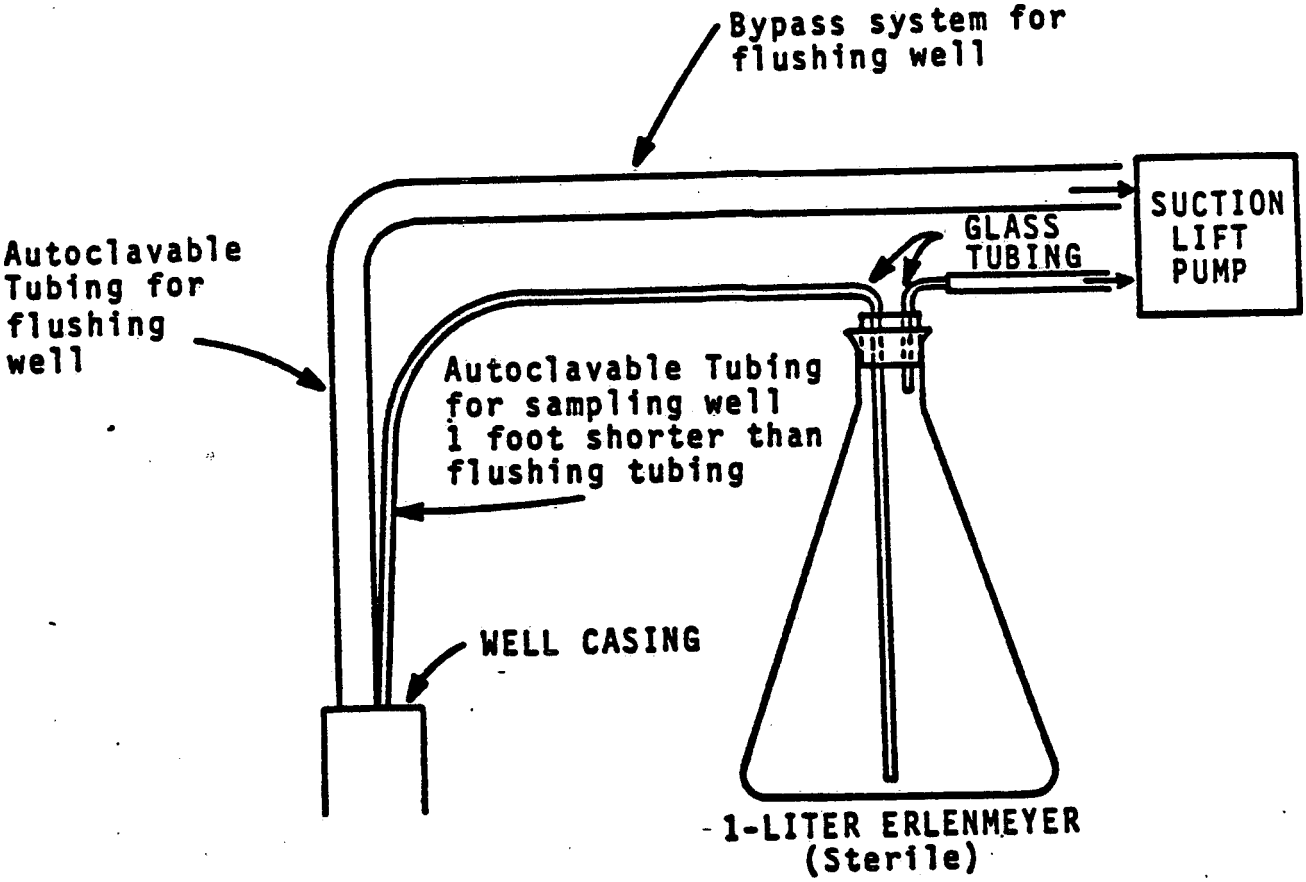

Figure 9.14 System for Microbiological Sampling of Wells Using a Suction-Lift Pump

Sampling requirements for surface water are generally the same as those for ground water. The sampling equipment will differ; however, the materials should always be stainless steel, Teflon, or glass.

Samples from shallow depths can be readily collected by merely submerging the sample container; however preservatives cannot be present in the container when it is lowered into the water. The method is advantageous when the sample might be significantly altered during transfer from a collection vessel into another container. This is the case with samples collected for oil and grease analysis since considerable material may adhere to the sample transfer container and as a result produce inaccurately low analytical results. Similarly, the transfer of a liquid into a small sample container for volatile organic analysis, if not done carefully could result in significant aeration and resultant loss of volatile species. Though the technique is simple, representative, and generally free from substantial material disturbances, it has significant shortcomings when applied to a hazardous waste, since the external surface of each container would then need to be decontaminated. A stainless steel spoon or trowel may be used at shallow depths if the sample would not be significantly altered during transfer.

The use of a sampling device constructed of a nonreactive material such as glass, stainless steel, or Teflon, is acceptable. The device should have a capacity of at least 500 ml, if possible, to minimize the number of times the liquid must be disturbed, thus reducing agitation of any sediment layers.

A 1-liter stainless steel or glass beaker with pour spout and handle is generally used. They are easily cleaned and considerably less expensive than Teflon. Also used are large stainless steel ice scoops and ladles available from commercial kitchen and laboratory supply houses.

It is often necessary to collect liquid samples at some distance from shore or the edge of the containment. In this instance, a device such as the pond sampler which extends the reach of the technician is advantageous. The beaker previously described, a disposable glass container, or the actual sample container itself, can be fitted into a telescoping clamp.

When sampling large bodies of water, a near surface sample will not sufficiently characterize the body as a whole. In this instance, a peristaltic pump may be used in which the sample, is drawn in through heavy walled Teflon tubing and pumped directly into the sample container. This method, however, is not suitable for pH sensitive or volatile samples in which stripping would occur.

Situations may still arise where a sample must be collected from depths beyond the capabilities of a peristaltic pump. In this instance an at-depth sampler may be required, such as a Kemmerer, ASTM Bomb (Bacon Bomb) or Van Dorn sampler. These devices work well; however, care must be utilized in selecting devices that are made of materials that will not contaminate the sample. Van Dorn samplers are not generally recommended for organics as they rely on an elastic closing mechanism that can effect samples. They are readily available

in a totally nonmetallic design which is very useful for sample collection for trace metals analysis.

Kemerer samplers are available on special order or adaptable for sample collection for organic analysis by substituting Teflon for the rubber or plastic stoppers. If the device is further ordered with stainless steel metallic parts in addition to Teflon stoppers it becomes a very versatile sampler.

As in the case of ground water sampling, samples should be preserved in the field and those receiving pH adjustment must be checked with pH paper to ensure the proper pH has been achieved.

For sampling of microbiological parameters, see section III.B.2.g.

4. Potable Water Sampling

Sampling potable water has the same QC requirements as sampling ground water. When sampling a tap, remove any aerating device and let the water run for at least 2 minutes before sampling. When sampling production wells, samples should be taken at a location on the well prior to any treatment systems. Sodium thiosulfate should be considered as a preservative only when the water is chlorinated. It is not necessary for drinking water methods (the 500 series) to be specified when performing analyses on potable water samples; the CLP or NPDES methods may be used.

5. Soil Sampling

When sampling soil, stainless steel or Teflon utensils should be used. The only exception is split spoons which are not readily available in stainless steel. Most split spoons in use are made of carbon steel and some have been observed to be quite rusty. Carbon steel spoons should not be rusty and should go through the same decontamination process as all other sampling equipment except that a 1% HNO_3 solution may be used instead of a 10% solution, to prevent stripping of metals. Split spoons must be decontaminated between boreholes. A spatula should be used to remove sample from the opened spoons, not the sampler's fingers. As per water sampling, volatile organics and TOX samples should be taken immediately upon opening the spoon. All samples except those for volatile organics and TOX must be homogenized before being put into sample containers. Samples for VOA and TOX should never be homogenized.

The homogenization of a soil or sediment sample is the process of mixing an individual grab sample by the coning and quartering method in a stainless steel pan with a stainless steel spatula to ensure uniformity throughout the sample. Stones and sticks should be taken out of the sample before homogenizing.

Compositing of a soil or sediment sample is done when samplers desire to get an average concentration of contaminant over a certain number of sampling points. Anytime compositing is done, the concentration of individual grab samples is diluted proportionately to the number of samples taken. Compositing is accomplished by mixing equal volumes of grab samples in stainless steel

pans with stainless steel spoons. Compositing is never performed on samples for volatile organics analysis, and should never be done by placing equal portions of grab samples directly into sample jars.

Splitting of samples is performed when two parties wish duplicate samples. Volatile organics and TOX samples must be taken first as co-located grabs, then a large quantity can be collected, homogenized, and used to fill the remaining containers. If it is desirable to collect soil samples at shallow depths, in order to collect enough soil for all the containers which need to be filled, co-located samples, i.e., samples taken next to each other at the same depths, may be taken and homogenized. (See Section III.B.14).

6. Sediment Sampling

Attachment IX provides a tabular comparison of some bottom grab and coring devices.

Sediments are the deposited material underlying a body of water. Streams, lakes, and impoundments will likely demonstrate significant variations in sediment composition with respect to distance from inflows, discharges or other disturbances. It is important to document exact sampling locations in field log books.

Samples can be taken with stainless steel spoons or trowels or the sample container itself if there is little or no water on top of the sediment. If the water above the sediment is a few feet deep, a stainless steel or brass corer or corer having a removable glass or Teflon liner may be used. This will better ensure the integrity of the surface layer of sediment and will minimize the loss of fine grained material. In deeper water, the bottom grab samplers presented in Attachment IX may be used. When using equipment such as a dredge which is not made of stainless steel, the sample material which comes in contact with the walls of the dredge should not be collected for analysis.

All sediment samples, except those collected for VOA and TOX must be homogenized as are soil samples prior to being put into containers.

If at any time surface water samples are being taken in conjunction with sediment samples, the water samples should be taken first and the sampler should approach the sampling points from the downstream direction.

7. Wipe Sampling

See Attachment V.

8. Dioxin

The decontamination procedure for dioxin sampling is the same as that when sampling for HSL compounds. Samplers may use methanol/hexane, acetone or 1,1,1 trichloroethane as solvents.

Homogenization must be performed on dioxin samples of a solid matrix.

Homogenization may be performed in a laboratory or in the field and it should be done using either the coning and quartering method or by using stainless steel blenders. Homogenization of wet sediment samples is more easily accomplished using the coning and quartering method.

QC sample requirements for every 20 dioxin samples taken are:

a. two performance evaluation samples from EMSL-LV with equal amounts of 2,3,7,8-TCDD in them;

b. one duplicate;

c. one blind blank (blind blank to the laboratory) - this sample does not go through the homogenization on site;

d. one known blank (lab will spike with 1 ppb TCDD) - this does not go through homogenization on site; and,

e. one blender blank - this is homogenized in the field to check for cross-contamination during the blending process, and is only necessary if blenders are used to homogenize the samples.

9. Air/Soil Gas Sampling

Refer plan to Marcus Kantz. - Ed Stoll

10. Field Instrumentation

A discussion of field instrumentation to be used on site should be provided. SOPs for their use should be present in the field technical manuals for each REM contractor. A non-REM contractor should provide SOPs. Note that when pH meters are used, it must be stated in the POP that the calibration of the meter will be checked before each day of use with a minimum of two buffers. The probes on these meters must be rinsed after each use with deionized water. All maintenance and calibration records for field equipment should be traceable through field records to the person using the instrument and to the specific piece of instrumentation itself. Equipment should be labeled with the date of the last calibration.

11. Drum Sampling

For sampling of non-homogeneous or multi-phase materials in drums, tanks, waste piles, lagoons, etc., refer to SW-846, Third edition, Volume 2 for guidance. The POP must include a detailed approach in terms of basic strategy and sampling equipment if such materials are to be sampled. Sampling equipment materials must be glass, stainless steel or Teflon.

12. Quality Control Sample Requirements

a. When sampling any matrix duplicate samples must be taken at a freuency of at least 5%.

b. When taking volatile organics samples, a trip blank, consisting of demonstrated analayte-free water sealed in 40 ml septum vials, must be taken into the field where sampling occurs. It should be taken at a frequency of one per day per matrix sampled. Filled trip blank vials may be stored on-site during a project if they are stored separately from solvents.

c. Field equipment rinse blanks must be taken each day of sampling. One blank should be taken for each type of equipment used. Rinse blanks consist of pouring demonstrated analyte free water over the cleaned piece of equipment into the sample container and analyzing for the analytes of concern.

13. Chain of Custody

Chain of custody is standardized in the REM contracts; however, in federal lead and responsible party work, copies of sample tags, field analysis and chain-of-custody sheets should be provided.

Samples, other than those collected for in-situ field measurements or analyses, are identified by using a standard sample tag which is attached to the sample container. In some cases, particularly with biological samples, the sample tag may have to be included with or wrapped around the sample container and waterproofed. The sample tags are sequentially numbered and are accountable documents after they are completed and attached to a sample or other physical evidence. The following information must be included on the sample tag:

a. site name
b. field identification or sample station number
c. date and time of sample collection
d. designation of the sample as a grab or composite
e. type of sample (matrix), and a brief description of the sampling location
f. the signature of the sampler
g. whether the sample is preserved or unpreserved
h. the general types of analyses to be conducted

If a sample is split with another party, sample tags with identical information must be attached to each of the sample containers.

The chain of custody record is used to record the custody of samples. It must accompany samples at all times. The following information must be supplied to complete the chain of custody record.

a. project name
b. signature of samplers
c. sampling station number, date and time of collection, grab or composite sample designation, and a brief description of the type of sample and sampling location
d. tag numbers
e. signatures of individuals involved in sample transfer, i.e., relinquishing and accepting samples. Individuals receiving the samples shall sign, date and note the time that they received the samples on the

form.

Sample analysis request sheets serve as official communication to the laboratory of the particular analyses required for each sample and provide further evidence that the chain of custody is complete.

Shipping containers should be secured to ensure samples have not been disturbed during transport by using nylon strapping tape and EPA custody seals. The custody seals should be placed on the containers so that they cannot be opened without breaking the seal.

Field records should be kept by contractor personnel for each site. All aspects of sample collection and handling as well as visual observations should be documented in the logbooks. All sample collection equipment, field analytical equipment, and equipment utilized to make physical measurements should be identified in the logbook. All calculations, results, and calibration data for field sampling, field analytical and field physical measurement equipment shall also be recorded in the logbook. All entries should be dated and initialed and should be legible.

14. Splitting of Samples

Where splitting is carried out as part of a project, the objective of the splitting, the method of splitting, and use of split data must be discussed in full. This should generally include a criteria as to what will be considered acceptable agreement between the two sets of data.

C. Analytical Requirements

1. Analytical Methodologies

Methodology may be chosen from any of these published references.

a. 40 CFR Part 136, October 26, 1984.

b. 1986 CLP Statements of Work for Organics, Inorganics or Dioxin.

c. Standard Methods, 16th Edition.

d. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, revised March 1983.

e. Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition.

f. Procedures for Handling and Chemical Analysis of Sediment and Water samples, May 1981, Technical Report CE/81-1.

g. Test Method for the Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA 600/4-81-045, September 1982.

See Attachment VI for a listing of some of the specific analytical methods available.

A tabular presentation of references and analytical method numbers must be provided for each parameter or group of parameters of interest and for each matrix.

If a method is modified or developed for use on a specific project, the modification must be documented, and validated. Proof of the validation must be provided to MMB and be considered satisfactory before the method can be used. The validation should address the following points, where applicable.

a. analytical objectives
b. method detection limits
c. analytical procedure
d. precision and accuracy
e. calibration
f. quantitation
g. data reduction/validation
h. holding times

2. Preservatives/Holding Times

In general, preservatives and holding times may be found in the respective methodology. Attachment VII includes a copy of Table II from 40 CFR Part 136, a discussion of the aqueous phenol preservative, the CLP RAS holding times and preservatives along with the "Target Compound List", the Table of Contents of SW-846, Third Edition, and Table 4-1 of SW-846 listing sampling and preservation procedures. The SW-846 holding times can be found within the applicable methodology. Note in all cases that chlorinated water samples demand special treatment.

The preservatives and holding times must also be presented in tabular form for each matrix and parameter of interest.

3. Sample Shipment

All samples must be shipped within 24 hours of being collected.

4. Laboratories - Use of CLP vs. Non-CLP Labs

Most analytical work done in the Region is performed within the Contract Laboratory Program; however, in some cases such as responsible party work, laboratories which do not participate in CLP are utilized. In this case the laboratory must supply to this office their QA/QC manual which is applicable to the analyses to be performed. Performance evaluation samples will be sent to the laboratory by this office for those parameters applicable to the project. They must perform acceptably on these samples. Lloyd Kahn is the reference sample coordinator. He should be consulted when it is necessary to send reference samples out. The primary contractor must perform a technical systems audit on the laboratory in order to evaluate the laboratory's capability to perform the work. A copy of the resultant report

should be sent to this office. The format of the audit checklist can be taken from the 10/85 CLP organics SOW, the dioxin SOW dated 10/86, and the inorganics CLP SOW dated 7/85. Only after this information has been provided to this office and is found to be acceptable can sampling and analysis begin. The CLP Statements of Work are available from the Sample Management Office (contact Talia Peters) at FTS 557-2490.

5. Data Validation

All data that is produced by CLP is validated by Region II. All data produced by laboratories that do not participate in the Contract Laboratory Program must be validated by that lab according to the Region II validation SOPs (see Attachment VIII). The QAO of that laboratory must be identified and must provide a signed document to the EPA project officer stating that he/she has validated the data in accordance with Region II protocol, or, if quality control criteria had to be established according to the dictates of the method, the laboratory is responsible for establishing precision and accuracy protocol and for validating the data based on that protocol. A document delineating the criteria used must be provided along with quality assurance summary sheets, and, if applicable, the Region II validation checklist. The summary sheets should be taken from the CLP Statement of Work, the Third Edition of SW-846 or be based thereon. Data analysis sheets must be provided for each environmental sample listing quantities found or detection limits.

6. Sample Containers

For federally funded projects the REM contractors obtain their sample containers from the CLP Sample Bottle Repository. These bottles are cleaned and quality controlled by contract (Attachment X). Containers obtained from any other source must be prepared, cleaned, labeled, stored and quality controlled in the same manner. This involves analysis/testing of one or more representative containers from each lot or batch after they have been cleaned, and designation of a storage QC container for testing at a future time if contamination of the containers is suspected. All storage QC containers should be kept in a separate contaminant-free area. See Attachment X for detail.

Any contractor storing containers from the CLP Sample Bottle Repository on their facility must monitor that storage area in the same manner as the provider of those containers, i.e. by those procedures outlined in Attachment X. This is because the contamination of sample bottles could occur while the bottles are stored in contractor's facilties, and contamination of environmental samples by the containers themselves is a possiblity. When storing sample containers on-site in trailers during projects, the containers should be kept sealed and kept at far as possible from solvents also being stored. Ideally, solvents should be kept in separate housing from the containers and blank water.

The sample volume and container materials for SW-846 methods are presented in Attachment VII. Container material requirements for the 40 CFR Part 136

methods are presented in Attachment XI; the minimum volume requirements must be found in the applicable methodology. The sample volume and container requirements for the CLP methods can be found in Attachment XI. For any references not mentioned, consult the methods themselves.

7. Performance and Systems Audits

A performance audit is understood to be an evaluation sample sent to a laboratory.

A technical systems audit is an on-site audit of the field sampling team or a laboratory in which the team's or lab's capability to perform the assigned work is evaluated.

The REM contractors are required to perform systems audits on a certain number of their sites each year. At this time, copies of the resultant reports do not come to MMB.

Auditing of non-CLP labs is addressed in item III.C.4.

8. Corrective Action

The POP should state that any changes made to it in the field or in the laboratory will be documented in writing. A narrative describing how to document changes should be provided, including who shall be contacted in the case of major changes being implemented during the course of field activities.

ATTACHMENTS

I. Listing of Acceptable Drilling Methods

II. "The Effects of Grouts, Sealants, and Drilling Fluids on the Quality of Ground Water Samples", Jennings, K.

III. SOP for Selecting Ground Water Well Construction Material

IV. Region II Policy for Total vs. Dissolved Metals in Ground Water Samples

V. Wipe Sampling

VI. Listing of Available Analytical Methods

VII. 40 CFR 136 Table II

CLP Preservation/Holding Times

Phenol Preservation Memo

SW-846 Table of Contents

SW-846 Table of Sampling and Preservation Procedures

VIII. Data Validation SOPs for Region II-Organic, Inorganic and Dioxin

XI. Comparison of Water Samplers

X. CLP Sample Bottle Repository Statement of Work

XI. Sample Container Tables from 40 CFR 136 and CLP

Certification of Insurance

O'BRIEN & GERE

acord CERTIFICATE OF INSURANCE

SET TAB STOPS AT ARROWS

ISSUE DATE (MM/DD/YY): 7/20/87

PRODUCER

Marsh & McLennan, Inc.
P. O. Box 4988
Syracuse, New York 13221

INSURED

O'Brien & Gere Engineers, Inc.
P. O. Box 4873
Syracuse, New York 13221

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY LETTER	A	American Casualty Company
COMPANY LETTER	B	Continental Casualty Company
COMPANY LETTER	C	Transcontinental Insurance Company
COMPANY LETTER	D	
COMPANY LETTER	E	

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIABILITY LIMITS IN THOUSANDS	EACH OCCURRENCE	AGGREGATE
A	GENERAL LIABILITY [X] COMPREHENSIVE FORM [X] PREMISES/OPERATIONS [X] UNDERGROUND EXPLOSION & COLLAPSE HAZARD [ ] PRODUCTS/COMPLETED OPERATIONS [X] CONTRACTUAL [ ] INDEPENDENT CONTRACTORS [X] BROAD FORM PROPERTY DAMAGE [X] PERSONAL INJURY	102288430	1/1/87	1/1/88	BODILY INJURY	$	$
					PROPERTY DAMAGE	$	$
					BI & PD COMBINED	$ 1,000	$ 1,000
					PERSONAL INJURY		$ 1,000
B	AUTOMOBILE LIABILITY [X] ANY AUTO [X] ALL OWNED AUTOS (PRIV. PASS.) [X] ALL OWNED AUTOS (OTHER THAN PRIV. PASS.) [X] HIRED AUTOS [X] NON-OWNED AUTOS [ ] GARAGE LIABILITY	002378895	1/1/87	1/1/88	BODILY INJURY (PER PERSON)	$	
					BODILY INJURY (PER ACCIDENT)	$	
					PROPERTY DAMAGE	$	
					BI & PD COMBINED	$ 1,000	
	EXCESS LIABILITY [ ] UMBRELLA FORM [ ] OTHER THAN UMBRELLA FORM				BI & PD COMBINED	$	$
C	WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY	WC802288429	1/1/87	1/1/88	STATUTORY		
						$ 100 (EACH ACCIDENT)	
						$ 500 (DISEASE-POLICY LIMIT)	
						$ 100 (DISEASE-EACH EMPLOYEE)	
B	OTHER Professional Liability	ANE8220387	7/1/86	8/31/87	$1,000,000 per claim 1,000,000 aggregate		

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

See the Attached.

CERTIFICATE HOLDER

David C. Lapidus
Supervising Contract Procurement
Specialist Purchase Bureau
CN230
Trenton, NJ 08625

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE MARSH & MC LENNAN INC

Description of Operations

Re: NJDEPX-464, RFP for Combe South Landfill Remediation

As respects Professional Liability:

Contractual liability for indemnification by O'Brien & Gere as required by the contract.

All joint ventures entered into with other Agricultural, Engineering, Landscape Architectural or Land Surveying firms for the purpose of rendering professional services are covered.

Special Conditions:

Limits shown apply to all work performed by the contractor.

Defense Costs - for Auto and General Liability in addition to limits shown; for Professional Liability defense costs are included in limit.

Pollution Exclusion applies to all of the above policies on the basis of pollution related claims on projects are excluded.

CERTIFICATION OF INSURANCE BY BROKER/AGENT

I have reviewed the insurance provisions of the Request for Proposal (RFP) for which the enclosed insurance certificates are being issued. The enclosed certificates include the information requested by the RFP on behalf of O'Brien & Gere Engineers, Inc. (Name of Bidder).

Based on my review of the insurance specifications of the RFP, I certify that, except as specifically noted herein, the insurance policies identified herein meet all of the RFP's insurance specifications.

7/17/87
Date Signed

Kathy Lee Graham
Signature

Kathy Lee Graham
Type or Print Name

Account Representative
Type or Print Title

Marsh & McLennan, Inc.
Name of Proprietorship, Partnership or Corporation Submitting Form

Witness:

Renée M. Derion
Signature

Renee Derion
Type or Print Name

7-21-87
Date Signed

CERTIFICATION OF INSURANCE UNAVAILABILITY BY BROKER/AGENT

I have reviewed the insurance provisions of the Request for Proposal (RFP) for which this certification is issued. At the instance of O'Brien & Gere Engineers, Inc.
(Name of Bidder)

I have made good faith efforts to procure (check one or both as applicable)

____	Professional liability insurance without pollution coverage
____	Comprehensive General Liability Insurance without pollution coverage
X	Professional liability pollution coverage
X	General Liability Pollution Coverage

which would cover the work required under the RFP. I contacted the insurance companies listed on an attached sheet. My most recent contacts with these companies are noted on the attached sheet. I affirm that (check one or both as applicable)

X	the insurance requested by the RFP was not available for the work required by the RFP.
____	the insurance requested by the RFP was available but at a price and/or under terms which are not reasonable, as is fully explained on an attached sheet.

July 21, 1987
Date Signed

Kathy Lee Graham
Signature

WITNESS:
Renee M. Derion
Signature

Kathy Lee Graham
Type or Print Name

Renee Derion
Type or Print Name

Account Representative
Type or Print Title

7-21-87
Date Signed

Marsh & McLennan, Inc.
Name of Proprietorship, Partnership or Corporation Submitting Form

The following companies have been contacted in an attempt to secure Pollution Liability:

American Casualty Company
of Reading, Pennsylvania

Royal Insurance Company

Fireman's Fund

Zurich American

Home Insurance Company

acord CERTIFICATE OF INSURANCE

SET TAB STOPS AT ARROWS

ISSUE DATE (MM/DD/YY): 7/23/87

PRODUCER

Marsh & McLennan, Inc.
P. O. Box 4988
Syracuse, New York 13221

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INSURED

OBG Laboratories, Inc.
1304 Buckley Road
Syracuse, New York 13221

COMPANIES AFFORDING COVERAGE

COMPANY LETTER	A	Continental Casualty Co.
COMPANY LETTER	B	American Casualty Co. of Reading, PA
COMPANY LETTER	C	
COMPANY LETTER	D	
COMPANY LETTER	E	

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

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A	GENERAL LIABILITY X COMPREHENSIVE FORM X PREMISES/OPERATIONS X UNDERGROUND EXPLOSION & COLLAPSE HAZARD PRODUCTS/COMPLETED OPERATIONS X CONTRACTUAL INDEPENDENT CONTRACTORS X BROAD FORM PROPERTY DAMAGE X PERSONAL INJURY	500153139	12/29/86	12/29/87	BODILY INJURY	$	$
					PROPERTY DAMAGE	$	$
					BI & PD COMBINED	$ 1,000	$ 1,000
					PERSONAL INJURY		$ 1,000
A	AUTOMOBILE LIABILITY X ANY AUTO– Specifically described ALL OWNED AUTOS (PRIV. PASS.) ALL OWNED AUTOS (OTHER THAN PRIV. PASS.) X HIRED AUTOS X NON-OWNED AUTOS GARAGE LIABILITY	500153139	12/29/86	12/29/87	BODILY INJURY (PER PERSON)	$	
					BODILY INJURY (PER ACCIDENT)	$	
					PROPERTY DAMAGE	$	
					BI & PD COMBINED	$ 1,000	
	EXCESS LIABILITY UMBRELLA FORM OTHER THAN UMBRELLA FORM				BI & PD COMBINED	$	$
B	WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY	WC700152328	12/29/86	12/29/87	STATUTORY		
						$ 100	(EACH ACCIDENT)
						$ 500	(DISEASE-POLICY LIMIT)
						$ 100	(DISEASE-EACH EMPLOYEE)
C	OTHER Professional Liability	AAE8220387	7/1/86	8/31/87	$1,000/per claim 1,000/aggregate		

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

CERTIFICATE HOLDER

David C. Lapidus
Supervising Contract Procurement
Purchase Bureau
CN 230
Trenton, NJ 08625

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE: MARSH & MC LENNAN INC

ACORD 25 (8/84)

CERTIFICATION OF INSURANCE BY BROKER/AGENT

I have reviewed the insurance provisions of the Request for Proposal (RFP) for which the enclosed insurance certificates are being issued. The enclosed certificates include the information requested by the RFP on behalf of OBG Laboratories, Inc. (Name of Bidder).

Based on my review of the insurance specifications of the RFP, I certify that, except as specifically noted herein, the insurance policies identified herein meet all of the RFP's insurance specifications.

7/23/87
Date Signed

Kathy Lee Graham
Signature

Kathy Lee Graham
Type or Print Name

Account Representative
Type or Print Title

Marsh & McLennan, Inc.
Name of Proprietorship, Partnership or Corporation Submitting Form

Witness:

Renee M. Derion
Signature

Renee Derion
Type or Print Name

7/23/87
Date Signed

5-8 (rev)

CERTIFICATION OF INSURANCE UNAVAILABILITY BY BROKER/AGENT

I have reviewed the insurance provisions of the Request for Proposal (RFP) for which this certification is issued. At the instance of OBG Laboratories, Inc. (Name of Bidder), I have made good faith efforts to procure (check one or more as applicable)

_____ Comprehensive General Liability Insurance without pollution coverage

X General Liability Pollution Coverage

_____ Professional Liability Insurance without pollution coverage

X Professional Liability pollution coverage

which would cover the work required under the RFP. I contacted the insurance companies listed on an attached sheet. My most recent contacts with these companies are noted on the attached sheet. I affirm that (check one or both as applicable)

X the insurance requested by the RFP was not available for the work required by the RFP.

_____ the insurance requested by the RFP was available but at a price and/or under terms which are not reasonable, as is fully explained on an attached sheet.

7/23/87
Date Signed

Kathy Lee Graham
Signature

WITNESS:

Renée M. Derion
Signature

Renee Derion
Type or Print Name

7/23/87
Date Signed

Kathy Lee Graham
Type or Print Name

Account Representative
Type or Print Title

Marsh & McLennan
Name of Proprietorship, Partnership or Corporation

Description of operations: Combe Landfill Remediation

As Respects Workmens Compensation: Coverage includes Longshoremans and Harborworkers Compensation Act Endorsement.

As Respects Professional Liability:

Contractual liability for indemnification by OBG Laboratories, Inc. as required by contract.

All Joint Ventures entered into with other Agricultural, Engineering, Landscape Architectural or Land Surveying firms for the purpose of rendering professional services are covered.

As Respects General Liability:

Additional Insured: The State of New Jersey as respects work performed by the insured for the Combe Fill South Landfill Site Remediation.

Special Conditions:

Limits shown apply to all work performed by the contractor.

Defense Costs - for Automobile and General Liability are in addition to the limits shown; for Professional Liability defense costs are included in the limit shown.

Pollution Exclusion applies to all policies shown on the certificate on the basis of pollution-related claims on projects are excluded.

Marsh & McLennan, Incorporated

The following companies have been contacted in an attempt to secure Pollution Liability for OBG Laboratories, Inc.:

Continental Casualty Co.

Royal Insurance Co.

Firemans Fund

Zurich American

Home Insurance Company

Certificate of Insurance

acord

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NAME AND ADDRESS OF AGENCY

The Young Agency, Inc.
516 Prospect Avenue
Syracuse, New York 13208

COMPANIES AFFORDING COVERAGES

COMPANY LETTER A — American Casualty Company
COMPANY LETTER B — Transcontinental Insurance Company
COMPANY LETTER C — Continental Casualty
COMPANY LETTER D —
COMPANY LETTER E —

NAME AND ADDRESS OF INSURED

OBG Operations, Inc.
1304 Buckley Road
P. O. Box 4762
Syracuse, New York 13221

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)	EACH OCCURRENCE	AGGREGATE
A *	GENERAL LIABILITY [X] COMPREHENSIVE FORM [X] PREMISES OPERATIONS [X] UNDERGROUND EXPLOSION AND COLLAPSE HAZARD [X] PRODUCTS/COMPLETED OPERATIONS HAZARD [X] CONTRACTUAL INSURANCE [X] INDEPENDENT CONTRACTORS [X] BROAD FORM PROPERTY DAMAGE [X] PERSONAL INJURY [X] Broad Form CGL	602378021	1/1/87	1/1/88	BODILY INJURY	$	$
					PROPERTY DAMAGE	$	$
					BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 1,000	$ 1,000
					PERSONAL INJURY		$ Incl.
A	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] ALL OWNED AUTOS (PRIV PASS.) [ ] ALL OWNED AUTOS (OTHER THAN PRIV PASS.) [X] HIRED AUTOS [X] NON OWNED AUTOS [ ] GARAGE LIABILITY [ ]	BUA402378019	1/1/87	1/1/88	BODILY INJURY (EACH PERSON)	$	
					BODILY INJURY (EACH ACCIDENT)	$	
					PROPERTY DAMAGE	$	
					BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 1,000	
	EXCESS LIABILITY [ ] UMBRELLA FORM [ ] OTHER THAN UMBRELLA FORM				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$	$
B	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY	WC400638339	1/1/87	1/1/88	STATUTORY		
						$ 100	EACH ACCIDENT
						$ 500	DISEASE (POLICY LIMIT)
						$ 100	DISEASE (EACH EMPLOYEE)
	OTHER						

DESCRIPTION OF OPERATIONS LOCATIONS VEHICLES

Job: Combe Fill South Landfill Site Remediation. *State of New Jersey is an additional insured - All policies on an "occurrence basis".

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 30 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

NAME AND ADDRESS OF CERTIFICATE HOLDER

State of New Jersey
David C. Lapidus
Supervising Contract
Procurement Specialist
Purchase Bureau, CN 230
Trenton, New Jersey 08625

clc

DATE ISSUED 7/24/87

THE YOUNG AGENCY, INC.

AUTHORIZED REPRESENTATIVE

CERTIFICATION OF INSURANCE BY BROKER/AGENT

I have reviewed the insurance provisions of the Request for Proposal (RFP) for which the enclosed insurance certificates are being issued. The enclosed certificates include the information requested by the RFP on behalf of OBG Operations, Inc. (Name of Bidder).

Based on my review of the insurance specifications of the RFP, I certify that, except as specifically noted herein, the insurance policies identified herein meet all of the RFP's insurance specifications.

7/24/87
Date Signed

Signature

George J. Schunck
Type or Print Name

President
Type or Print Title

Young Agency, Inc.
Name of Proprietorship, Partnership or Corporation Submitting Form

Witness:

Signature

Mary J. Farrelly
Type or Print Name

7/24/87
Date Signed

5-8 (rev)

CERTIFICATION OF INSURANCE UNAVAILABILITY BY BROKER/AGENT

I have reviewed the insurance provisions of the Request for Proposal (RFP) for which this certification is issued. At the instance of OBG Operations, Inc. (Name of Bidder), I have made good faith efforts to procure (check one or more as applicable)

_____ Comprehensive General Liability Insurance without pollution coverage

_X_ General Liability Pollution Coverage

_X_ Professional Liability Insurance without pollution coverage

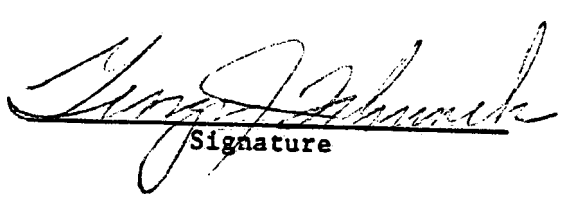
_X_ Professional Liability pollution coverage

which would cover the work required under the RFP. I contacted the insurance companies listed on an attached sheet. My most recent contacts with these companies are noted on the attached sheet. I affirm that (check one or both as applicable)

_X_ the insurance requested by the RFP was not available for the work required by the RFP.

_____ the insurance requested by the RFP was available but at a price and/or under terms which are not reasonable, as is fully explained on an attached sheet.

7/24/87
Date Signed


Signature

WITNESS:


Signature

Mary J. Farrelly
Type or Print Name

7/24/87
Date Signed

George J. Schunck
Type or Print Name

President
Type or Print Title

Young Agency, Inc.
Name of Proprietorship, Partnership or Corporation